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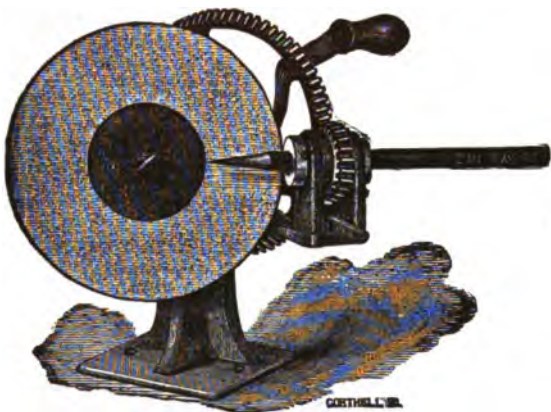
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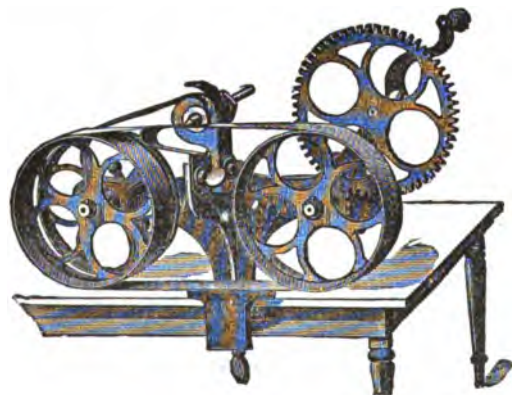
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"I have used Ayer's Hair Vigor and have received more satisfaction from it than from any other hair dressing I ever tried."—C. E. Wooster, Westover, Md.

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AMERICAN TEACHER



VOL. XIV.

DEVOTED TO THE METHODS AND PRINCIPLES OF TEACHING.

No. 1.

SEPTEMBER.

BY MRS. HELEN [HUNT] JACKSON.

THE goldenrod is yellow ;
The corn is turning brown ;
The trees in apple orchards
With fruit are bending down.

The gentian's bluest fringes
Are curling in the sun ;
In dusty pods the milkweed
Its hidden silk has spun.

The sedges flaunt their harvest,
In every meadow nook ;
And asters by the brookside
Make asters in the brook.

From dewey lanes at morning
The grapes' sweet odors rise,
At noon the roads all flutter
With yellow butterflies.

By all these lovely tokens
September days are here,
With summer's best of weather,
And autumn's best of cheer.

But none of all this beauty
Which floods the earth and air,
Is unto me the secret
Which makes September fair.

'Tis a thing which I remember ;
To name it thrills me yet :
One day of one September
I never can forget.

—*Century Magazine.*

FACTS AND FICTION.

WHAT comes ofteneast out of order ? Disorder.

WE recommend those persons who aim after striking effects to wind up the clock.

THE successful suitor for a lady's hand may truly be said to carry away the palm.

THE secret-society-man's wife echoes with Cowper the cry, "O for a lodge in some vast wilderness."

TOMMY, when questioned as to his political tenets answered: "I suppose I am a Republican by birth."

LOOK out for the man who is always suspicious of everybody else's motives. The chances are that he has some motives himself.

IT is a curious and interesting fact that the people who are most afraid of burglars are, as a rule, the people who haven't anything in the house that a self-respecting burglar would steal.

A FELLOW never has experienced all the joys of camping out unless he has had one of those telescopic drinking-cups shut up on him just as he is handing to a young lady a cup of scalding hot coffee.

SERMONS IN STONES.

BY ESTHER CONVERSE.

IT was a welcome sound after our long tramp over the hills,—the sharp, clear ring of the stone-cutter's chisel. It chimed with the shrill treble of the locust, and seemed a part of the insect life that filled the cool, September air. Following the sound we pushed on, confident of finding the cup of water we craved.

In a clearing shaded by a few trees stood a little shanty. It was a kindly face that bent over the granite block,—a face rugged and strong, and clear, honest eyes looked into our own as we were welcomed with a cordial "Good day."

"Certainly, certainly; come in and rest a bit. My little spring yonder will give you as cool and pure a draught of water as you'll find."

"Moses smote the rocks in the wilderness and water came forth," he said, as he returned with his pitcher. "I know what hand smote the stones that guard my spring, but I often wonder what cleaver was used. They're as clean cut, sir, as this stone, just a foot apart, and the water bubbles up from between."

"He is the master workman, you know," I replied. "Marvellous are His works."

"You are a minister, sir? I thought so. Curious, isn't it, how the marks of our trade are stamped upon us. Now this right arm of mine tells my story; but you, sir, whether you carry a Bible, a fishing rod, or a rifle, the mark is there all the same."

"And I?" asked my companion.

"You," replied the workman, after a searching glance, "you may be either a teacher or a storekeeper. If you are the former I claim kinship with your profession. Your business like mine is to make polished stones, 'polished after the similitude of a palace,' and it's nice work for both of us, sir. A stroke a little too heavy does injury not easily repaired. It's a stroke here and a stroke there, gently and intelligently given, that makes these beautiful corner stones. I've seen many a shaft spoiled, when pretty well along, by a careless stroke; and again I've seen an ungainly block grow to a thing of beauty in the hands of a skilled workman. And, sir, I think we share the same pride in the work of our hands. When you see a man who has been under your tuition standin

in the court room or pulpit, you say proudly, 'I had a hand in making him; he was a rough, ignorant boy when I took him.' Just so I feel when I see one of my shafts in the cemetery, or the polished pillars of the town hall yonder. But I remember the mistakes, the false strokes I gave; is that the case with you, sir?"

"The comparison fails in one point," said the teacher. "You make what you will; we cannot. The man we would prepare for a statesman becomes, perhaps, a ranchman on the plains; the rough, ungainly boy, with little apparent help from us, becomes the renowned preacher or lawyer."

"That's true, sir,—that's true: but some influence may have given the bent in each case. I should shrink from your responsibility; such tender, living material requires a delicate touch."

The teacher made no reply; the workman thoughtfully tapped the rough shaft with the tool he had been using, before replying to the remark that should turn him from his subject.

"A nice place to camp out? Indeed it is,—good water, dry soil, pure air, and small game plenty in the woods yonder. I tried it a few nights once, and found it comfortable enough except for the lonesome feeling. Ever camp out, sir? Then you understand me. It's solemn; it seems to bring you nearer the Creator. You get pretty 'near to nature's heart,' as somebody says. How the sudden rush of an animal through the thicket, or the hoot of an owl, startles you! I think a nervous man, or a man with a troubled conscience, wouldn't care to try it more than once. No, I shouldn't camp out just for pleasure."

"Well, yes, there was reason for it. It may interest you to hear about it, sir, though it happened years ago. Perhaps it first led me to compare your work with mine, for it's about one of the precious stones we were speaking of. A runaway boy, a truant from school, hung around this shanty nearly a week. The whole town was searching for him, and from missing my dinner one day I located him here. He'd fallen into the hands of an unskillful workman, and hated his teacher and hated school. The two go together, don't they? He was beaten one day in school, and it made him desperate, for he was a proud-spirited lad, as sensitive as you or I. Can't you imagine how every stroke of the lash cut the tender, living spirit of the lad? I needn't make a long story of it. I camped here until I found him, and a more humble, broken-hearted lad you never saw. The solitude had impressed him as it had done me. But he couldn't forgive his teacher."

"'He treats me as you treat that stone,' the boy said. 'He thinks I have no feeling. He hammers me all the time, and his sharp words cut as your chisel cuts.' Then he showed me the marks the lash had made. 'They'll always stay there; when I am a man I shall feel the stinging and see the scars;' and, sir, I think he was

right. He is man now, but I think the scars are there. The shaft wasn't spoiled: the master-workman took care of that, but I doubt if any amount of polish can efface such work. You would think it waste time to work up the grain of your living shafts as carefully as I have worked up this pillar. How many strokes do you suppose I put into it? See the polish? You must excuse my talking so much; it isn't every day I find some one to talk to. Good day, gentlemen; happy to see you again."

The old workman bent again over his task, yet how gently and patiently were the strokes given. We stopped and looked back before entering the path that led to the next clearing.

"His is the easier task," remarked the teacher. "He fills his orders; we, like the 'blind spinner in the sun,' make we know not what, and often see no result from faithful labor."

The cool September morning changed to hot midday as we continued our tramp. We passed other quarries and other workmen, but we felt no interest in any save the solitary man working his "sermon in stone" on the lonely hillside.

SHALL PUPILS BE AIDED AT HOME?

BY IDA M. GARDINER, PROVIDENCE.

SHALL pupils have help at home in preparing lessons for the next day? On general principles, and in most cases, emphatically No! Why not?

I. The teacher cannot gain a clear idea of how much of her work has been grasped by the pupil, and has nothing on which to base her next day's work, unless she knows how much the child is able to do unaided.

II. The child aided at home may have perfect lessons day after day, yet fail on the final examinations, discouraging teacher, parent, and pupil. Of course an experienced teacher has ways of testing a pupil in the class, but time is often wanting to get the real measure of the child's actual, personal knowledge. Thus he often appears to be ready for the examination when in reality he is capable of little original thinking.

III. Few children who are not able to get their lessons without help are capable of carrying home a sufficiently clear idea of the teacher's method for the parent to comprehend it and use it in helping the child. The parent, therefore, uses his own method; but the child, conscious that it is a different method, is troubled and confused. "Teacher doesn't do it so," he exclaims despairingly, and loses the force of the parent's explanation through the fear that it does not mean the same as the explanation given to the class.

It is true that originality and variety should be encouraged, by allowing the pupil to solve the problem in as many ways as he can,—provided always that he can give

a clear explanation of the steps taken, and the reasons for taking them; but this can come only after the pupil has clearly grasped some one method. Until this one is understood, the introduction of another serves only to confuse the child, instead of helping him.

IV. Few parents discriminate between judicious and injudicious assistance. It is far easier to take the slate and do the work, than to lead the young mind step by step to do the work. If parents could assist the child by showing him *how to study*, by explaining certain principles which will lighten his work, then indeed might



SARAH L. ARNOLD, Minneapolis.

teachers be glad to have their work supplemented at home. Thus, in arithmetic, a few simple rules of procedure will help the child in numberless cases. Thus:

1. Make sure that you understand what is asked for.
2. Note carefully what is given in the statement of the problem to help you to this.
3. Do the conditions make it necessary to find something else first, as a basis for finding the required result?
4. Imagine that you yourself are doing just what is stated in the problem.
5. Use your common sense in judging about the correctness of your answer.

These last two points cannot be too strongly emphasized. Children will often work intelligently, accurately, and quickly, as soon as the thing becomes a reality to them through this use of the imagination, whereas, as a mere

mathematical question, they could do nothing with it.

Few pupils will do a "work" example the first time and *discover for themselves* that they have an answer which, intelligently stated, means that it would take a boy and a man, working together, longer to do a piece of work than if either did it alone. And there is nothing absurd to pupils, even in higher grades than the primary, in saying, "If one man can do a piece of work in six days, it will take nine men nine times six days."

Parents who are able to give their children principles of study, are usually strong advocates of helping children at home; and their children "prove the rule," of course. Why should they not?

V. Few mothers have time to assist their children at all. I once heard the mother of five children say to their teacher, with a bluntness born of long trial, "I pay you to teach my children, and do it myself. You hear the perfect recitations, and I do the hard work."

VI. The child who has been helped at home comes to the class with all the work done; another, who has had no help, gets but half of the lesson prepared. The teacher has no way of measuring exactly the actual work of the pupils, except by the work presented. One child is marked perfect; the other has fifty per cent. less. This apparent premium on dishonesty is a temptation to others to get help.

VII. The teacher loses the best opportunity of studying her pupils' minds, their mental habits, their needs; and thus is shut out from that adaptation of her teaching to the wants of her pupils, which comes so swiftly to the teacher who really knows how the minds of her pupils work. In a class of five girls who have been taught to work independently, no two will solve a given problem in the same way, if there is a possibility for different combinations. One has a most ingenious and difficult solution, which she has wrought out entirely alone. It is good, but too elaborate for so simple a problem. She needs to cultivate "short cuts," etc. Another makes rapid mental combinations, and reaches correct results, but puts nothing upon her paper to show that she has reached the result by accurate reasoning rather than by "guess-work." She must be taught to indicate connecting links.

VIII. The teacher loses the great happiness and satisfaction of seeing the child grow strong day by day, which is a teacher's best reward.

IX. Parents cannot be expected to detect as quickly as a professionally trained teacher versed in the principles of mental activity, those mental peculiarities which a little well-directed effort would remove. Parents have often said, in substance: "You will never be able to teach my child arithmetic. I have given up all hope. She cannot understand it." Generally, in such cases, the trouble is that the parent forgot that he was explaining to a *child*, to whom every step of the process is new. He did not take sufficiently short steps to accommodate himself to the child's ability.

X. Children who are aided at home soon become imbued with the idea that they cannot work alone. If compelled to work without assistance other than that of the teacher, progress may seem at first somewhat slow; but there will be a steady increase in mental strength and the power of independent thinking, that will tell in the end. As soon as the child wakes up to the fact that he really is able to work alone, his pleasure in the consciousness leads him to redouble his efforts, and rapid progress is assured.

Experience has taught the writer the wisdom of forbidding all assistance at home; if the pupils have worked faithfully during the time allotted for preparing the lesson, and cannot then succeed, the teacher gives sufficient help to start them in a correct line of thought, and again throws them upon their own resources. The results of this method have been most gratifying, and the children are so proud of working independently that when one is obliged to state that she has not succeeded with all the problems, she often adds: "But I think I can get it if I can have a little more time. I would rather not be helped."

BOOK - A - MONTH COURSE.

WE propose to outline for the readers of the JOURNAL OF EDUCATION and AMERICAN TEACHER a course of reading for the school year of 1890-91 which shall give them the best professional reading in a helpful way. We do not advise every teacher to read, as we intend to have books read, a book a month. Many teachers cannot afford to read one in two months. It will pay teachers to give an entire year to the first book.

A series of questions will accompany the recommendation of each book.

Answers may be sent to us. They will be examined, and at the end of the ten months a statement will be made of the books read, and our estimate of the answers on each book. A neat diploma-like statement will be sent. All this without expense to our readers. We shall, of course, only read and pass upon the work of those whose names appear upon the subscription list of one or other of our publications, JOURNAL OF EDUCATION or AMERICAN TEACHER.

While this statement is not a diploma, we think it will carry as much professional weight as many of the reading circle diplomas. We are fully aware of the labor this will involve, but if we can in this way improve the quality of professional reading, it is worth all the time and effort required, and the larger the number who avail themselves of this offer the greater will be the satisfaction.

We shall probably secure for these diploma statements the signature of the Superintendent of Public Instruction in the state where the reader resides.

SEPTEMBER BOOK.—*Practical Hints for Teachers.* By George Howland, Superintendent of the Chicago

Schools. Published by D. Appleton & Co., New York. Price, by mail, \$1.00.

It is a book of two hundred pages. Four pages a day will easily make one the master of one of the best professional books. We endorse the assistant superintendent of schools of San Francisco, who said in a personal note recently, "It is pure gold from preface to the closing sentence." It is thoroughly philosophical, attractive in literary style, practical in every paragraph, up to the times in every suggestion, conservatively radical, and without a technical term or hackneyed phrase.

QUESTIONS TO BE ANSWERED.*—When the book is finished use half sheets of paper not more than eight inches long by six inches wide. When mailed *fold*, never roll. Write at the top the name of the book and your own name and address. Number the answers, do not write the questions.

1. Which chapter have you enjoyed most?
2. Which chapter has helped you most?
3. What impressed you most in the Editor's Preface?
4. Are you most impressed with the advantages or disadvantages of moral teaching in city schools as compared with the country?
5. Name one way in which your reading of the book will help your pupils morally.
6. What two grand impulses have been given to education in this country, according to Mr. Howland? (Chap. II.)
7. What is the "real unsolved problem of our schools?" (Chap. II.)
8. What does Mr. Howland mean by the first paragraph on page 40?
9. Of what practical value to you will be the last paragraph on page 41?
10. How much does the paragraph on page 45, beginning, "When the pupil," etc., mean to you?
11. Name some of the elements of growth in school life.
12. What is the scholarship aimed at in the school?
13. Name the five most important points made in the chapter upon "The Teacher in the Schoolroom."
14. Have you any criticisms upon "How the School Develops Character?"
15. Write out the chapter upon "The Class Recitation," suggesting the point of each paragraph in a *single brief sentence*.
16. What is the relation of the principal to the other teachers; to the pupils of other teachers; to the "office;" to the superintendent; to disaffected parents? Write a *short* paragraph upon each of these relations.
17. What need is there of a superintendent of schools?
18. What gain is there when there is none?
19. What is the greatest loss when there is none?
20. What is the "unit" of the school building as viewed by the superintendent?

* It is not expected that any teacher will answer every question. They will be suggestive, however.



FIRST STEPS IN LANGUAGE DEVELOPMENT.*

BY HARRIET A. LUDDINGTON,
Principal of Training School, Pawtucket, R. I.; Author of "Picture Problems."

I.

Language Development in Primary Schools Incidental to Work in Other Subjects.

"THE development of the language," says a prominent educator, "depends entirely upon the development of the thought." The so-called "language lessons" of the modern primary school are the outgrowth of an effort to apply this truth to the work of the school-room. As the special purpose of these lessons is to *arouse thought* upon some interesting and familiar subject, thereby stimulating the pupil to a *free expression* of his ideas, it is evident that such exercises are a step in the right direction. A broader application of this principle would, however, lead to some modifications in language work.

As a general thing the "language lessons," and, too often, the early reading lessons, also, are totally unrelated to the other work of the school, and are regarded as separate subjects. Thus, language and reading are considered *ends* in themselves, instead of being regarded, as they should be, as a *means of thought development*. It is only recently that teachers have begun to realize that special language lessons accomplish nothing which may not be attained more economically in connection with the other lessons of the school,—that is, those lessons which do not have as their chief motive creating an opportunity for training in language.

In the recent report of the New England Superintendents' Association the following significant paragraph occurs: "The language studies, which deal only with symbols of thought,—like reading, writing, spelling, talking, and written composition,—should be taught, not as so many separate branches, as they have been in the past, but in connection with the thought studies and as a *means of teaching these*. In this way these (language) studies would be taught in the most effective manner, and time now needlessly spent on separate lessons in spelling, reading, writing, and language could be devoted to the more thorough teaching of the thought studies."

It is evident that the time is not far distant when both language and reading lessons, as *separate exercises*, will no longer have a place in the elementary school. Already,

* Copyright, 1888.

in many primary schoolrooms, the main emphasis is placed on nature lessons, on science, elementary botany, zoology, physics, etc., while language and reading are used as *aids only*,—yet very important aids,—to the development of these subjects. It is, moreover, undeniably true that where the work is skillfully conducted, the end of the first year of school life finds the children able to read more fluently, and to use language with greater discrimination, than is the case in schools where reading and language are taught as isolated subjects.

In "How to Study Geography" the author thus prophesies the advent of a day when certain studies now considered all-important will become merely incidental: "The day is slowly coming when all the elementary science, with history and literature, will be essential factors in teaching from the beginning to the end of the common school course. Wise and thoughtful teachers will, after due deliberation, drop some of the isolated spelling, technical grammar, and figure reckoning, to make room for the direct study of life and the preparation for life. It will be gradually discovered that reading, spelling, grammar, numbers, and drawing, can be best taught as immediate aids to the study of the thoughts of God in nature."

All the lessons of the lowest grade should be incidental to nature work. The natural sciences, with elementary history, geography, and literature,—considered as parts of the one great study of life,—should be the subject of instruction. Number and form, reading and language, painting, drawing, modeling and making should be aids to the development of these subjects. Language training will be an inevitable result of the studies because clear thinking is naturally followed by adequate expression.

The best sentences spoken by the little people in their eager talk should be written upon the board and read, thus making a language and a reading lesson of their own observations. The choice of the best sentences prompts them to more careful observation, better thinking and expression. The most available observation lessons are those connected with plant life, with the germination of seed, the budding, leafing and blooming of trees and plants and the ripening of fruits.

Number and form are connected with nature work in various ways, often by giving little problems during an observation lesson, problems suggested by questions or conversations of the children. It will frequently help the pupils to give the solution without the answer.

Lessons in elementary history and literature may be frequently woven into the observation lesson, through entertaining fact or classic myth. Lessons in physics, touching upon light, heat, etc., are easily introduced by means of fascinating, simple experiments, also by daily observation of clouds, temperature, winds, apparent movements of the sun and moon.

Lessons in geology may be easily given through a study of the squirrel, beaver, muskrat, common rat, or any of the domestic or local wild animals. There should be

comparison of parts, as the number of toes on hind feet with the number on fore feet; the length of body with length of head and tail. Form perception may be quickened by noticing the shape of the animal, of its home, nest, food, etc., as well as by the molding in clay of home, food, etc. In the botany lessons there is an almost limitless opportunity of molding. One of the most important elements of success is the adaptation of nature lessons to the season of the year.

Children who have been carefully taught to observe, handle, model, group, and describe natural objects for the first year of school life can, with perfect ease, upon entering the second grade, answer almost any question in abstract number as far as 12, and many questions as far as 20. They originate problems readily and solve with ease those usually given to third grade pupils. Though the reading has been largely incidental, and much of it in script, the pupils will read fluently at sight, matter of the Second and even Third Reader grade. They will write easily short, original, well-constructed sentences, showing an unusually large vocabulary for second grade pupils. So far as we know, every teacher who has given this method a fair trial is convinced that there is a tremendous power in concentration, in relating subjects rather than treating each as an isolated study.

It is evident that a course of training like that described above must be conducted by a thoughtful and skillful teacher, one who appreciates the unity of the different subjects presented, and who knows how to make the most of every childish thought. The great difficulty in observation lessons, is to avoid drifting into desultory and aimless talking concerning the objects presented. Under such circumstances no definite language training can be expected, because no definite thinking is secured. The ideal is to hold every child to the best thinking which he can do, and to secure from each the most truthful and accurate expression of thought of which he is capable.

It should again be noted that these little lessons in science, history, and literature are not given for the sake of training in language, but language development does result, because good thinking (which a skillful teacher always takes pains to secure) demands adequate expression in speech. To quote again from "How to Study Geography": "The evolution of the thought demands the evolution of that language which conforms to the thought, and is adequate to its expression. Simple facts require simple sentences; generalizations, compound and complex sentences; in fact, there is no modification to be found in the closest and most minute grammatical or logical analysis in which pupils would not be fully exercised both in writing and speaking if the teaching is scientific, or in other words, properly and fully adapted to growth."

Recommend the AMERICAN TEACHER to your associates.

MAP SKETCHING.—(I.)

BY D. R. AUGSBURG, NEW YORK.

THE primary object of map *drawing* is to gain a knowledge of the general form and the relative position of the parts of the earth's surface.

The primary object of map *sketching* is to illustrate some particular truth about the parts of the earth's surface,—as, for example, the route of Stanley in his recent trip across Africa, or the position of the gold mines in Australia.

The common mistake in map sketching is trying to represent too much. It requires more knowledge to know what to leave out of the sketch than to draw the map itself; it also requires much knowledge to know what part to draw accurately and carefully, and what part to generalize or abbreviate. For example, if the vicinity of Melbourne, in Australia, is to be pictured on the blackboard, only that part of Australia need be drawn with care, and the remainder of the country sketched in the most general manner.

The frame work or diagrams used in systems of map-drawing are usually too complicated for map-sketching, and it is best not to use them unless they are very simple and closely associated with the outline of the map.

The map diagram is of doubtful utility, for the following reasons: (1) It is often as complicated as the map



itself. (2) The unity or individuality of the map is often lost sight of in fitting it to the diagram. (3) The details of the diagram, not always being associated with the map, are easily forgotten.

(4) The relative distance and proportion of the parts of a map should be compared and associated with each other, not with points in a diagram. (5) The mind is often divided between the map and the diagram. (6) Such diagrams are not natural.

The utility of the map-diagram is apparent. (1) When it is simple and intimately associated with the outline of the map. (2) When it aids in retaining the general shape of the map. (3)

When it assists the memory by associating the map and diagram points together.

(4) When the relative distance and proportion of the points in the diagram and map are the same. (5)

When the mind is not divided by the use of the diagram, (6) When the diagram is natural.

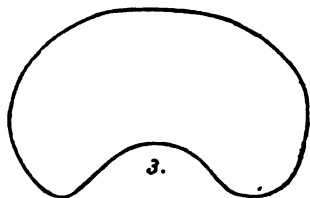


A map that requires more than one minute to sketch is

of doubtful advantage in the class-room. Each moment is precious to the teacher, and any means that will shorten processes is clear gain. Rapid sketching grows out of careful and accurate drawing. Sketching must have this preparation of careful drawing, or it is of little use.

Exactness in map-sketching is not looked for. Its object is to illustrate in an effective manner the question before the class.

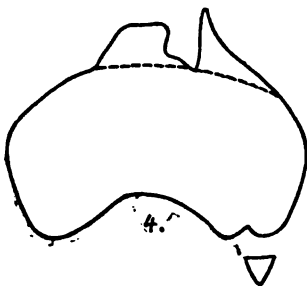
The process of map-sketching is as follows: (1) Make a careful and accurate drawing of the map,—[Fig 1, map of Australia].—and while drawing it make such observations as the following: Australia is about twice as long as wide. Leaving out North Australia and York peninsula,



its general shape is that of a bean (Fig. 3.) Cape York is the furthest point north; Sandy Cape, east; Melbourne, south; and Northwest Cape, west. Cape York is a very little further north than North Australia. Melbourne is further south than Cape Leeuwin. The Gulf of Carpentaria is a little to the right of the center, etc.

Observe that the mountains extend from Cape York following the coast around to Spencer Gulf; that the interior is a vast plain, with low mountains on the western coast, extending from North Australia to Cape Leeuwin.

(2) Keeping these observations in mind, draw the map from memory on the blackboard. If it cannot be reproduced from memory, copy it once more, going over the same points as before. Usually once drawing it is sufficient. The highlands should be drawn with the flat of the crayon, making the mountain range and most elevated parts whitest, the same as represented by the dark shading in Fig. 1. (3) Draw the map paying no attention to the minor indentations of the coast, but with long, sweeping lines, as in Fig. 2.



Now we are ready for the sketch. With a long, sweeping stroke of the crayon draw a bean-shaped figure about twice as long as wide. (Fig. 3.) To the northeast coast add York peninsula, and to the northern coast North Australia, and the result is a respectable outline map of Australia (Fig. 4.) To this may be added as many details as the occasion calls for. This map ought to be drawn in less than thirty seconds.

THE average of the best school buildings in America is the best in the world. Even Germany does not compare with our average.

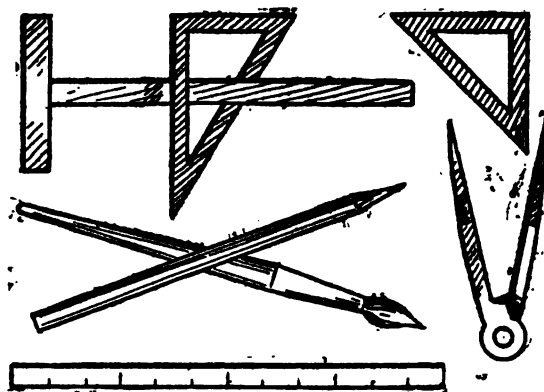
TOOLS AND THEIR VALUE.

BY PROF. CHARLES M. CARTER,
Massachusetts State Normal Art School, Boston.

THE manual training school generally requires that every object to be made shall be expressed first by a *drawing*, an exercise demanding definite preliminary thought regarding every detail of the completed work. It determines length, breadth, thickness, shape; it considers the possibilities of materials and the process of manufacture, so that when the student comes to realize the form represented by construction, he has simply to express by other means thought already once worked out by his mind on paper. This secondary expression by construction is the most prominent feature of the manual training school. It gives and requires skill in the use of tools and necessitates a review of the mental processes involved in the expression by drawing; so by the time the object is completed the student has twice,—first by drawing, second by construction,—expressed thoughts primarily developed by observation.

Industrial drawing has been so developed as to occasion precisely the same exercise of the hand, eye, and mind as in the manual training school; the only difference being in extent of appliances, special workshops, instructors, etc.

THE TOOLS OF DRAWING.—Expression by drawing and construction both necessitate the employment of tools. The principal ones employed in drawing are pencils, brushes, rulers, T squares, set squares, compasses, and dividers. The simplest of these tools, the pencil, may be used either freehand or mechanically. Its free-

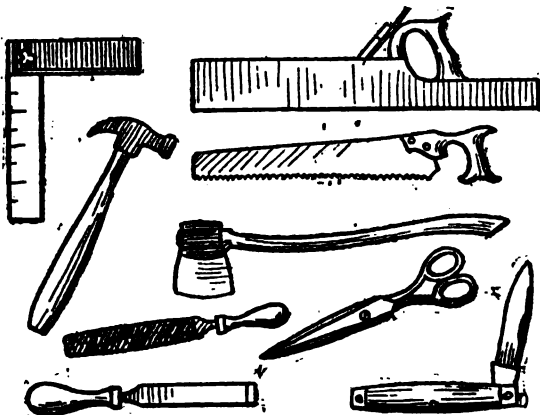


The Tools of Drawing.

hand use in shaping a square, for instance, necessitates regulated thought in regard to size and shape, after which the hand and eye obey the mind in expressing its thoughts. In representing the same square mechanically, the T square, the set square, dividers, and compasses are among the means used to secure accurate expression, but their use does not involve as great mental activity as required in producing the figure freehand. The tools used in mechanical drawing invariably lead the mind, hand, and

eye to depend less on their own independent power and more on the automatic action of the tool. That this is true is shown by the dependence placed on tools by those workmen who have never had freehand training of the hand and eye. A carpenter thus educated will not rely on his eye alone when dividing a distance, placing the two ends of an edge at the same height, or placing an edge in a vertical position, or at right angles to another. Each of these operations, from lack of training, obliges him to use tools which will produce the result mechanically.

In this connection it should be noted that a commission appointed in France to investigate technical schools declared that freehand drawing was a most important element in technical training, and that it should precede the study of mechanical drawing, inasmuch as pupils in the latter branch invariably work with greater facility and accuracy if they have received preliminary freehand training.



The Tools of Construction.

THE TOOLS OF CONSTRUCTION.—The elementary tools required in construction are “the seven hand tools,—the axe, the saw, the plane, the hammer, the square, the chisel, and the file. These are the universal tools of the arts, and the modern machine shop is an aggregation of them rendered automatic and driven by steam.”

Knives, scissors, etc., have been employed somewhat in simple exercises connected with drawing as now taught in our public schools. These inquiries present themselves: “Are all of these tools necessary in developing power of hand, eye, and mind?” “Are some more important than others?” and “Are there any which give exactly the same training as others?”

All exercises requiring the unaided use of the hand demand the greatest activity of hand, eye, and mind. All work requiring the use of tools substitutes more or less for the exertion of these powers mechanical or automatic action. The plane, for instance, is so constituted as to aid us in producing the straight edge and smooth surface. Some skill and thought is needed in its use, but not as much as is demanded in producing the same results by the more primitive use of a jackknife blade, which in the plane

is placed in such a manner as to more rapidly, accurately, and automatically produce results, and in the planing machine it is placed so as to work altogether automatically.

The illustration afforded by the plane could be duplicated by reference to the other universal tools, also to the tools employed in mechanical drawing; the compasses, for example, being so constructed as to enable the pencil to describe circles accurately at the first attempt. To produce the same circle freehand would require much greater exertion of the hand, eye, and mind, and so it is that one is led to believe that freehand exercises are of the first importance, obliging us, as they do, to give the greatest attention to the forms studied.

COMPOSITION BOOKS IN FRENCH SCHOOLS.

BY DR. L. R. KLEMM, WASHINGTON, D. C.

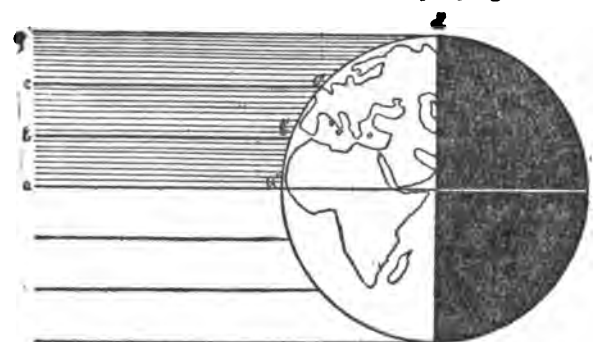
IT is well known that the French people have a trained eye for beauty. All the patterns of their machines and other contrivances, even the boxes in which they pack their goods, are ornamented elaborately and artistically. This highly developed sense of form and beauty is due to the care French teachers bestow upon drawing and sketching in school, and in no small degree to the many art schools maintained by the state and by communities.

I was struck with wonder the other day when I went through a Liceum at Rheims (a high school). I was requested to look over the composition books of the pupils.

Each composition was headed by a pencil sketch drawn either in rude outlines or beautifully shaded. Some of these illustrations were real masterpieces of drawing, representing landscape scenery; others were clumsy delineations, but all compositions contained at least some attempt at illustration.

I selected a few composition books and asked for their loan with a view to copying some of the designs. After school a delegation of students called at the hotel and brought the book, asking whether they might assist me in copying. I could not well accept their services, though politely offered, and traced some sketches myself. Here is the result.

The subject of one of the compositions was “The Zones,” and this was the sketch accompanying it:

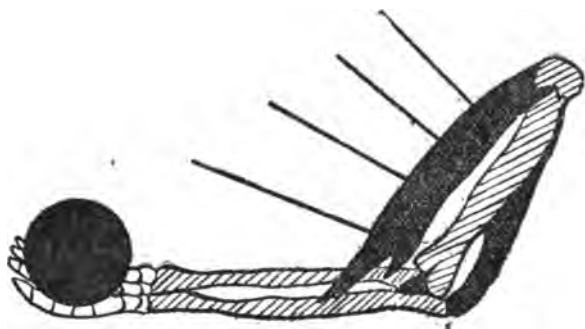


Another was profusely illustrated with sketches of

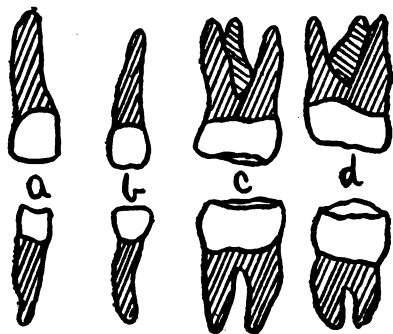
flowers. I copied the simplest to show the accuracy of representation. One glance shows what flower it is.



A third was illustrated with sketches of bones and muscles. This is one of them :



A fourth treated of the human teeth, and these sketches may suffice to prove the artistic skill of the boy :



The subjects of all the compositions were taken from the studies the pupils then pursued. A class studying astronomy would write compositions on astronomical subjects ; a class in history would write on historical subjects, and sketch battlefields and maps, chiefly exhibiting changes in boundaries and movements of armies, etc.

Composition thus treated is the legitimate offspring of the day's studies. These pupils cannot complain of having to write of something foreign to their comprehension or experience. The compositions they furnish are summaries of what they learn in a certain study, and such composition work greatly assists the retention of matter in the memory. The practice of composing in pictures as well as in words seems eminently suggestive and worthy of imitation.



GEOGRAPHY EXERCISE.

A TEACHER in Syracuse had her class aroused to great interest over an exercise in geography. We captured by shorthand one series of questions that show the character of the exercise.

Teacher—"I am thinking of a place."

"Is it in North America?" "Yes."

"Is it in the United States?" "Yes."

"Is it a country?" "No."

"Is it a cape?" "No."

"Is it a state?" "No."

"Is it in New York State?" "Yes."

"Is it in the eastern part of the state?" "Hardly."

"Is it in the southern part of the state?" "No."

"Is it in the central part of the state?" "Yes."

"Is it a lake?" "No."

"Is it a river?" "No."

"Is it a city?" "No."

"Is it a town?" "No."

"Is it a county?" "Yes."

"Has it three lakes amid it?" "Yes."

"Is it Onandaga county?" "Yes."

Then one pupil would take the stand and put himself under fire, then another. The enthusiasm of the pupils, the way in which they handled themselves, their familiarity with geographical places, showed the exercise to have real merit.

HINTS FOR TEACHING 'THE VIRTUES.—(I.)

BY ALTEN.

TRUTHFULNESS.

Expect it.

Let the pupils feel that you are uniformly and conscientiously truthful in school and out.

Treat it as a manly virtue.

Show that it merely conforms to the facts.

It is keeping one's word.

Truthfulness begins in the thought.

It is heroic sometimes.

It always shows itself in the life and character as much as does intemperance in the body.

Beware of a lie that has a little truth. It is the basest kind of a lie.

Show that every one respects the truth in others.

Magnify the truth element in lesson learning and reciting.

Correct a tendency to falsehood by placing right motives before the child.

Be very careful that your rules do not tend to falsehood.

Create and emphasize a public sentiment for truthfulness.

GEMS.

Buy the truth and sell it not.

A thousand probabilities do not make one truth.

Above all things; always speak the truth.

Better suffer for the truth than prosper by falsehood.

Great is truth and mighty above all things.

He must keep a sharp lookout who would speak the truth.

He that does not speak the truth to me, does not believe me when I speak the truth.

He that does not fully speak the truth is a traitor to it.

In truth is right.

Truth will get uppermost at last.

Sooner or later the truth comes to light.

The truth is mighty and will prevail.

The truth will out.

Truth conquers all things.

Truth crushed to earth shall rise again :

The eternal years of God are hers.

VARIETY WORK (PRIMARY.)

BY LAURA F. ARMITAGE.

1. Write three words that end in *y*.
2. Write names of two yellow flowers.
3. Write names of two red flowers.
4. Write names of two animals having fur.
5. Write names of two animals having hair.
6. Put letters before *old*, and make other words of it,—(g-old, t-old, s-old, etc.)
7. Name three kinds of trees that grow near your home.
8. Write what stands for Doctor, Mister, Street.
9. Write names of four birds you have seen.
10. What color is your house?
11. What animals dig holes in the ground to live in?
12. Write five girls' names.
13. Write five boys' names.
14. Write three names for dogs,
15. Of what color are lemons?
16. Of what color are ripe grapes?
17. Write three words of four letters each.
18. Name five things that can jump.
19. Name something that likes to live in the water.
20. Name three things you like to do.
21. Tell what cows are good for.
22. Name some animals that have hoofs.
23. Write the first name of a light-haired girl in your schoolroom.
24. Of a dark-haired boy.

COMPOSITION WORK.

BY E. M. HARRIMAN, DORCHESTER, MASS.

I STOOD before my class in composition, thoroughly enthused with my subject. It was the glorious Taj Mahal. I descanted learnedly; I read from Haven's eloquent description; I explained; I illustrated. Among other things I remember this: "Scholars," I said, "we read that when this wonderful rotunda is lighted with innumerable torches, and many instruments discourse sweetest music, which the echoes repeat again and again, the effect is magical. I can imagine a very little what it must have been like, from my trip to Saratoga this summer, where I attended one of the famous garden concerts. The brilliant lights, playing over the ferns, shrubs, and flowers, the weird shadows on the edges of the grounds, and the bewitching music, made a scene which I shall never forget. I think the effect of light and music on the Taj must be something like this, only more beautiful from the marvelous patterns of flowers and fruits traced in precious stones, the pure white of the ivory carving," etc.

Of course I made my sentences more simple for them. Conceive, if you can, my astonishment on reading from one of the compositions in which they were to reproduce what I had told them, the following: "The Taj Mahal is lighted by electric lights, and they have garden concerts there. It is in Saratoga."

This from a boy of fifteen. Then the structure of the sentences was something alarming. A few examples will suffice: "As you would be going inside, and look inside, you would see the tombs of the emperor and empress, build of the different kind of marble, and with beautiful boquets of flowers. The echoe from the music sounded as plain as if you were aside of it."

After correcting and re-writing for hours with red ink, until each paper had a decidedly sanguinary look, I presented them to the class for revision. I also requested some of the owners to place upon the board the original manuscripts, and asked the pupils to suggest improvements in spelling, capitals, punctuations, grammatical structure, and arrangements of sentences, making suggestions and directing their work. While examining I had copied on a slip of paper a list of misspelled words, with the name of the speller. In another list I wrote out all wrong constructions, each with the author's name. These I presented in class work. Then I seated myself for meditation. Clearly, composition work was not a strong point with the class; and, clearly, if I didn't desire to do it after the documents were handed to me for revision, I must do a large amount of sentence-making with my class, showing them first how to think, and then how to express their thoughts with accuracy and variety. Accordingly I selected for our subject, "Boston," and chose a girl to do my writing on the board, that I might be free to act on the minds before me. Then, having divided my subject into topics, and requested that every one should inform

himself from various sources on these topics, I called upon the scholar nearest me to give a sentence. This caused surprise. The more brilliant were ready to volunteer by the lifted hand, but that each should be asked while I quietly waited, was another thing. After much effort a short, childish statement was given. Then I asked for something more from the same pupil, and suggested that the two be combined by using a participle or a clause. When this had been done, I inquired if any one thought of a better word or form of expression.

And so the work went on, with hints and helps from me. Some found it very difficult to keep the thought and to express it, but I insisted upon one sentence from each, and soon the eyes began to brighten, the cheeks began to glow with the enthusiasm of interest. Hands came up in all directions for correction and improvement. They had caught the *modus operandi* of composition-making, and were delighted to see how easy it was. Many of the hints in regard to choice of words, phrasing, and arrangement of sentences, were very bright. I soon had my board covered, and the next written exercises showed fifty per cent. improvement.

HOW WE WENT TO SCHOOL WITH THE FLOWERS.

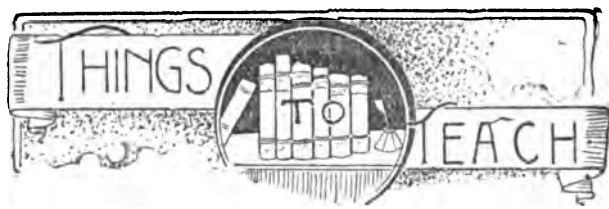
BY SARAH L. BENNETT.

FLORENCE is learning her multiplication tables,—twos and threes. Ida can count ten. This morning, after their number lesson, we looked at some money plant that came to school with Florence. Florence found five yellow leaves in each blossom. Then Ida discovered five stamens, and Florence at the same time showed the five sepals. Florence remembered that the pansy has five colored leaves, too. They were inclined to rest satisfied with five, but at the suggestion that the money plant has more numbers, Ida found two green leaves at each joint, and Florence found one pistil in each blossom. They couldn't find four, so I took that for my number, and showed them the four sides of the queer twisted stem. Then Florence found a whole extension table of twos; her spray had twenty-eight leaves.

Next Day.—Florence brought roses to-day; a sweet-brier with its five petals, five sepals, and "lots of stamens, more than I can count"; a table of fives. We found the seven leaflets in a sweet-brier leaf, and threes, fives, nines, and elevens in the garden roses.

Later.—The children grow more and more eager for the flower numbers. Every day Florence tells me of some new discovery, and in hunting for the numbers they find such wonderful things that they had never suspected in the very commonest ones.

They have already made some acquaintance with the clover, the pea blossoms, potato, etc.



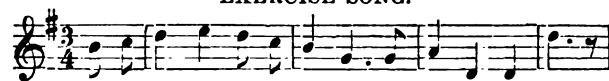
SONG - GAMES.

BY MISS M. E. COTTING.

THERE is no better means by which the hum-drum of school life may be relieved than that of introducing, as the pupils show weariness or restlessness, bright song-games.

One's experience necessarily varies, as class after class presses upward and onward, but with the majority of children in any class songs relating to the seasons, family relationship, animals or their traits, and all occupations

EXERCISE SONG.



Let us look at little Tommy, who shows us the game;



Let us look at lit-tle Tommy: now we'll do the same.

of man will meet with favor even though the music lacks marked characteristics. The more marked the rhythm of music and text, the greater the delight and stronger the development of the young singers.

When eyes have had work sufficient for the time, a song is started, and the child whose name is mentioned, immediately "shows us the game," or in other words, makes the movement he wishes the rest of his playmates to imitate with hands, head, or feet. Directly the song is finished the music is repeated to the syllable *la*, the movement continuing meanwhile. If children are particularly restless, or if they return from recess, or fling to the basement, in a rollicksome mood there is no better way of "reducing them to silence" than by playing this little game. It recommends itself not only for the reasons mentioned, but because it develops the physical part of the child, makes it necessary for him to be inventive,—no child should reproduce a movement,—and thoroughly alive to what is occurring about him, leads to an appreciation of graceful movements instead of those which are rough and rude; and, best of all, he learns a lesson in unselfishness, for all share alike in being allowed only one choice of a movement.

Another song, doing double service as song and game, affords a class the greatest pleasure. This song, "The Cooper," may in the beginning form the basis of a very instructive object talk, which later can be summed up in written language exercises. To be sung at the seats the movements are as follows:

THE COOPER

Adapted.

1. Oh, I am a cooper! no care do I know,
While round my nice bar-rels so quick-ly I go;
Tic-a - tic tac, tic-a - tic tac, tic-a - tic tac, I go.

"My work is quite useful, my work is quite right,
And so I keep pounding from morning till night;
Tic-a-tic tac, tic-a-tic tac, tic-a-tic tac till night.

"Come join in my labors. come join in my song,
And we will be happy thro' all the day long;
Tic-a-tic tac, tic-a-tic tac, tic-a-tic all day long."

For the first two lines the arms, extending before the body,—finger-tips touching,—enclose a circular space, or imaginary barrel; the next two lines are illustrated by hammering one clenched hand upon the other, moving both about an imaginary barrel-top before the child; the noise made by the rapping against the barrel accompanying each verse as the chorus, is simulated by striking the finger tips of both hands against the desk top. Upon taking up the first two lines of the second verse the child turns first to the right, then to the left, explaining that his work is useful and right, before resuming the hammering round and round an imaginary barrel; the chorus of this verse repeats the finger tapping of the first. The first line of the last verse shows the child stretching out one hand in invitation to the playmate at the right, the second line calls for a similar movement with the other hand, while the rest of the verse calls for brisk clapping,—the child-expression of happiness; the ending chorus repeats movements of those preceding.

As a game, "The Cooper" may be utilized both in the schoolroom and on the playground. In the former, after marching about the room, the children stand in a circle just outside the desk limit; each child represents a stave, and as the song opens the arms are raised and the hands placed upon the neighbor's shoulders. This movement connecting the parts of the ring symbolizes the hoop. The music of the chorus may be accompanied by foot-tapping or clapping. For the second and last verses the movements used in the song may be repeated with one exception, and that occurs when singing, "And so I keep pounding," etc.; now all turn to right and left alternately to pretend to pound the hoop into place by lightly touching the neighbors' shoulders.

When used on the playground a large ring is formed, the teacher lightly runs (without parting with one particle of her dignity) about within the ring touching several children, or coopers, who each go about to choose five children. The coopers each arrange their five staves, or the children, in groups, or barrels, about which they walk simulating the hammering of veritable coopers. The arms of the children, or staves, as the song opens are intertwined forming the hoop, which is not broken till the song ceases, when the coopers slip the hoops loose and return the staves to their places in the ring. The children, — not coopers nor those forming parts of the barrels, — carry out the same movements as are given when the game occurs in the schoolroom.

OCTOBER SENTENCES.

[For Blackboard Work.]

BY GEORGIA A. HODSKINS, SPRINGFIELD, MASS.

THIS morning the grass was white.
The air was sharp and keen.
Jack Frost had been abroad.
It was he that had painted the grass.
He pinched the little summer plants with his cold fingers.
They turned brown wherever he touched them.
Then the bright sun rose.
The frost melted away.
At noon it was almost as warm as in summer.
We gathered a fall bouquet.
There were purple asters, brown headed grasses, and the last fringed gentians.
May found three bright cardinal flowers.
They were down in a warm spot that Jack Frost had not found.
You can no longer find the bright butterflies.
If you look along the fences by the brooks, you will see where they have hung their winter cradles.
The woodchucks and squirrels know that winter is coming.
The woodchuck will bury himself in the ground to wait for warm weather.
He will eat nothing through all the long winter.
Mr. Squirrel will stay with us a little longer.
He is busy now filling his pantry with acorns, chestnuts, and walnuts, to last him through the winter.
The boys and the squirrels like Jack Frost.
He opens the chestnut burrs, and the north wind shakes down the shining nuts.
The little chipmunks will hide their stores in a hole in the ground.
The red and gray squirrels will take theirs to their nests in the hollow trees.
Farmer Brown sent us a basket of pears and grapes.
The crickets do not sing in the fields now.

This month the winter potatoes must be dug.
 Last night Dick's father had a husking party in the big red barn.
 Fanny saw a flock of purple finches.
 They stopped on their way from the North to their winter home in the South.
 Many of them will stay in our cedar swamps all winter.
 The witchhazel bushes were still in blossom.
 The scarlet woodbines were running over the wall.
 Between the leaves we could see the clusters of bright purple berries.
 Down in a sheltered nook Sue found the last harebell.

DISTRIBUTION OF SEEDS.—(IV.)

BY FANNY D. BERGEN, CAMBRIDGE.

PERHAPS there is no more obvious topic in which to interest autumn classes in botany than that of the distribution of seeds. Very many seeds, with various adaptations for natural distribution, are at this season at their prime, and the collection and examination of those now ripe may easily suggest talks about other species that matured in early summer, and examples of seeds and fruits from most of our hardy common herbs, shrubs, and trees will not be difficult to find even at this time. The wonderful contrivances by which nature scatters her seeds may equally interest kindergarten children, who on their way to and from school blow the exquisite seed-globes of the dandelion "to see if their mother wants them," and high school pupils who are doing careful work in systematic botany. The one thing to do with pupils is, of course, to set them to seeing for themselves every seed within their reach and to finding out how and why it leaves the plant that bore it and travels from its birthplace to discover some new home for itself.

One very interesting group of fruits and seeds will in-



FIG 1. WINGED FRUITS AND SEEDS.—1. Winged double fruit of the Maple. 2. Winged seed of Catalpa. 3. Scale of the Larch-cone with two winged seeds.

clude all those that fly or travel through the air, whether by membranous wings or by means of light plumes or tufts of down. Typical examples of the winged kind are the fruits of the ash, the elm, and the maple, or the seeds of the catalpa, the trumpet-creeper, or of many trees of the pine family. Of the latter class, those adapted by all manner of hair-like, feathery, or other appendages to be easily borne by the wind, common illustrations are the fruits of the lettuce, the thistle, and the

dandelion; or such seeds as those of the willow, the willow-herb or fire-weed (*Epilobium*), the milk-weed (*Asclepias*), and the cotton plant.

The character and quantity of such work as is here

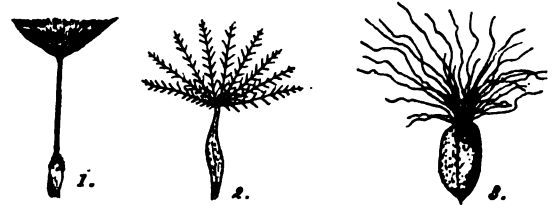


FIG 2. HAIRY AND FEATHERY FRUITS AND SEEDS.—1. Feather-crowned fruit of Dandelion. 2. Feather-crowned fruit of "veg-table oil" (*Tragopogon*). 3. Seed of *Epilobium*, with cluster of hairs.

suggested must depend upon the time at the teacher's disposal, the age of her pupils, and the immediate surroundings. But whatever the locality, city or country, it will be possible to find material at hand sufficient so to illustrate the lessons that every child may obtain enough hold on the subject to have it make a difference in every walk he takes. When he knows that the preservation of the species in great part depends upon the fact that seeds and fruits have, in the struggle for existence, gradually acquired these ingenious appendages for floating in the air and being carried about in showers by every gust of wind, what before was simply an every-day fact or occurrence will become, for him, one interesting method by which nature cares for her own, or rather helps them to care for themselves. The delicately winged seeds of the pine family afford such pretty examples of adaptation to aerial navigation that in localities where conifers are not native it will be well to get cones from cultivated trees or to have a few sent by mail for class use. Stand the cones in some dry, warm place until the thick scales open, exposing at their bases the seeds with their thin, papery wings. Much can be seen and a good deal of rough classification done without the help of a magnifying glass, but if pupils can have the latter, they can see so much more that they will better enjoy the work.

LESSONS IN ZOOLOGY.*

BY CLARABEL GILMAN, JAMAICA PLAIN, MASS.

NOTE TO TEACHERS.—These lessons are all to be taught from specimens. Usually each child should have in his hand the animal to be studied, but when this is large, two or more children can examine the same specimen together. It will take time for pupils to see for themselves each point as it is considered, but it will be time well spent. The chief object of these lessons is to teach children to observe and to reason, and in comparison with this the mere acquisition of facts is of slight importance.

The Sponge.—(I.)

FOR the teacher, a bath sponge with one or two large openings on the top; for each child, a straight wire hairpin and a slate sponge, are the things needful for this

lesson. Each sponge may be cut vertically, almost to the base, through one of the large tubes, or vertical sections may be used with the whole sponges. The day before the lesson each child should wash out his sponge and notice how it is changed by the water. Sponges should always be moist when studied. The hairpins are straightened out for use as probes.

The children have already learned the following things :

The hard, dry sponges took in water through all the little holes, and became soft and elastic. They are made of threads called fibres, whose ends project in little brush-like bundles on every side but one, and this side is darker and smoother than the others. There are many small holes in the sponge, and only a few large ones, or sometimes only one. One or two bright pupils notice that there are holes all through the sponge, and a large tube running straight down from the large opening.

Children will give some of these points spontaneously; others must be brought out by skillful questioning.

Now, being careful not to tear the fibres, we put the probes into the large openings, and trace the tubes (Fig. 1, *a*) into which they lead, almost to the base of the sponge. We put the probes into the small holes, and find small tubes (Fig. 1, *b*) leading from some of them to the large tubes; from others, cross-tubes (Fig. 1, *c*)

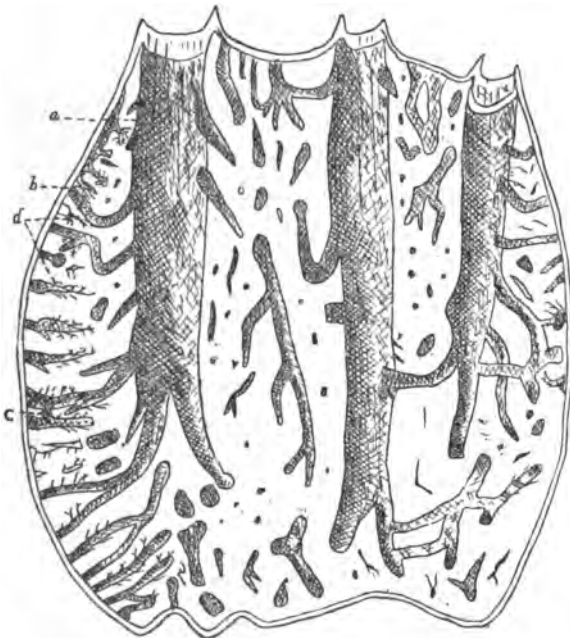


Fig. 1. Vertical section of glove sponge from Nassau, shown with the flesh.

connecting one small tube with another. Some of these connecting tubes in process of formation show plainly as channels on the surface, only partly covered in as yet by little bridges of fibres. Besides these tubes, there are others so small that we cannot trace them out (Fig. 1, *d*) passing in every direction through the mass of fibres.

Let us find Key West and Nassau on the map. These are the two principal markets for American sponges, which

live in the Caribbean Sea and off the Florida coast. If we should visit Nassau, a boatman would take us out to the sponge fisheries. The water is very clear, and with a water-glass—a tube, or box, with a pane of glass at one end—which we press against the surface, we can see the bottom. Here and there on the coral rock, and contrasting with the brightly colored fishes and the brilliant hues of the sea-fans, are some dark masses fixed to the reef and sending out little jets of water from openings in the top. These are the sponges. We have in the boat a very long-handled fork, with three prongs, curved so that they will take a firm hold of the sponge, and with this our boatman pulls one off from the rock. Sometimes they are taken in a dredge, but the best sponges are brought up by divers. Our living sponge has a dark brownish or purplish flesh that covers all the fibres. After the sponges are killed by being exposed to the air for a day, they are thrown into pens made of stakes driven in shallow water, and left till the flesh decays. Then they are washed and trimmed, and sorted according to size, and afterward packed in bales and sent to New York or London to market.

This is true of American sponges. Mediterranean sponges, which are much finer and more expensive, receive more careful treatment.

NUMBER HINTS.

BY A. E. WINSHIP

IN number teaching there are a few things to be kept ever in mind. Numbers should be first learned without being taught. The first twelve numbers should come into a child's experience and language unwittingly from a need of them. He cannot use marbles, jackstones, or any other objects genuinely in his plays without wanting to speak of them by number, and as soon as he wants to use numbers he will know them whether he is taught or not. Among the first things in school life should be some honest play on the part of the children with objects, not more than twelve in number, so that he shall want to know how many he has at different times. Do not teach anything about the numbers in parts, but merely familiarize him with the numbers as such; *i. e.*, get the first twelve numbers into his experience and vocabulary, naturally, before you speak of them as a school study. Do not be too formal in your presentation of numbers; let him bring the divisions of a number into his experience naturally, if possible, entirely apart from the proper order. If a child has occasion to know half a dozen before he knows half of six, let him know it. Before you systematize his knowledge let him be far in advance of that which you systematize; let him live in its atmosphere awhile before you make him breathe it by rule.

When the systematizing begins do not "hash" it too fine. I want to confess to having been a slave to the perfection of system too long. The first thing that you need

to teach a child with care after he has had the experience of which I have spoken is that 2 and 2 are 4. He knows that $2 + 1 = 3$, that $3 - 2 = 1$, that $3 + 1 = 4$, and $4 - 1 = 3$. He may not know the following combinations, and should be taught them by objects until they are as rhythmically known by him as that $2 + 1 = 3$. These combinations are,—

$$\begin{aligned} 2 + 2 &= 4 \\ 2 \times 2 &= 4 \\ 4 - 2 &= 2 \\ \frac{1}{2} \text{ of } 4 &= 2 \end{aligned}$$

$$\begin{aligned} 4 + 2 &= 6 \\ 3 + 3 &= 6 \\ 2 \times 3 &= 6 \\ 3 \times 2 &= 6 \\ 6 - 4 &= 2 \\ 6 - 3 &= 3 \\ 6 - 2 &= 4 \\ \frac{1}{2} \text{ of } 6 &= 3 \\ \frac{1}{3} \text{ of } 6 &= 2 \end{aligned}$$

$$\begin{aligned} 6 + 2 &= 8 \\ 5 + 3 &= 8 \\ 3 + 5 &= 8 \\ 4 + 4 &= 8 \\ 2 \times 4 &= 8 \\ 4 \times 2 &= 8 \end{aligned}$$

$$\begin{aligned} 7 + 2 &= 9 \\ 6 + 3 &= 9 \\ 5 + 4 &= 9 \\ 4 + 5 &= 9 \\ 3 + 6 &= 9 \\ 2 + 7 &= 9 \\ 3 \times 3 &= 9 \end{aligned}$$

$$\begin{aligned} 3 + 2 &= 5 \\ 5 - 2 &= 3 \\ 5 - 3 &= 2 \end{aligned}$$

$$\begin{aligned} 5 + 2 &= 7 \\ 4 + 3 &= 7 \\ 3 + 4 &= 7 \\ 2 + 5 &= 7 \\ 7 - 5 &= 2 \\ 7 - 4 &= 3 \\ 7 - 3 &= 4 \\ 7 - 2 &= 5 \end{aligned}$$

$$\begin{aligned} 8 - 6 &= 2 \\ 8 - 5 &= 3 \\ 8 - 4 &= 4 \\ 8 - 3 &= 5 \\ 8 - 2 &= 6 \\ \frac{1}{2} \text{ of } 8 &= 4 \\ \frac{1}{4} \text{ of } 8 &= 2 \end{aligned}$$

$$\begin{aligned} 9 - 7 &= 2 \\ 9 - 6 &= 3 \\ 9 - 5 &= 4 \\ 9 - 4 &= 5 \\ 9 - 3 &= 6 \\ 9 - 2 &= 7 \\ \frac{1}{3} \text{ of } 9 &= 3 \end{aligned}$$

Let all this be first learned by object work,—problems illustrated by the real objects which he handles. Let him make his own problems. Do not go above the combinations in 4 until he is as familiar with it as with $1 + 1 = 2$. Let him make figures from the first when he needs them. Let the signs be made at once, also; then have everything that he does with objects written by him that he may tell what he has done.

A LETTER.

BY A SPRINGFIELD TEACHER.

CHILDREN, I want you to write a letter for me to-day.

"To whom shall we write?"

You may each choose for yourself.

What is it, Ned?

"I can't write a letter."

Why not?

"Haven't anything to write."

Let us have a little talk first. You have a cousin in New York?

"Yes'm. He is just as old as I am."

If he had been here yesterday would you have taken him with you on our walk?

Do you think he would have enjoyed it?

Suppose, instead of writing him that we went to walk yesterday, you tell it to him as you would if he were here. Begin your letter properly, then look at these questions.

Perhaps they will help you:

1. Who went to walk?
2. When did we go?
3. At whose house did we stop?
4. What did the boys have for pets?
5. Where had they found the young woodchucks?
6. How old were they?
7. What did they eat?
8. How did they sit while eating?
9. What cat-like noise did they make?
10. Did they drink like a dog?
11. Where did we go next?
12. What did we find near the brook?
13. What did you bring home from your walk?
14. Do you wish Dick could have gone with you?

PUBLISHERS' ANNOUNCEMENTS.

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THE AMERICAN TEACHER.

A. E. WINSHIP,
W. E. SHELDON, } Editors.

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Be firm but kind.

Don't get rattled.

A PLEASANT year to you.

BEGIN as you can hold out, physically.

READ our "Book-a-Month Course." See page 8.

THERE are 300,000 teachers in the United States.

BROOKLYN women teachers are to have better pay, if there is any virtue in justice and public opinion.

BOSTON is ready to welcome the National Educational Association next July, if the directors will accept the hospitality of our city.

CALIFORNIA is the banner American state in the average salaries paid the teachers, and in the quality of teaching in the rural schools.

DON'T use up your newly acquired strength or thought or illustrations or experience during the first week of school. Spread it over the whole year.

MORE of the commercial school idea should be incorporated into every high school in cities that have no separate English or commercial school.

WE congratulate our readers upon a delightful vacation, if we may judge all by the experiences of those who have reported upon their "outing."

THE summer schools have had by far their grandest season. Glens Falls, Chautauqua, Martha's Vineyard, and others have been successful as never before.

THE teachers' bureaus have just about doubled the business of previous years. The man who wishes a teacher and does not go to a bureau for candidates is a curiosity.

IN due time the selection of subordinate teachers will be left entirely to principals and superintendents.

THE "Book-a-Month Course," provided for by the article on page 8, is the best opportunity ever offered teachers who wish to do the best professional reading under the best conditions with the best assistance.

MISS ARNOLD will write another series of articles for the AMERICAN TEACHER for the coming year. She has chosen for her subject, "Zachary's First Year in School." The first installment was delayed, so that it fails to appear in this number, but they will appear regularly hereafter.

THE JOURNAL OF EDUCATION for the eight numbers beginning September 5 will contain special school exercises for Authors' Birthdays, etc., etc. It will also contain, in the two months, as much first class reading on methods, devices and principles as any two dollar books. These eight numbers will be sent postpaid to any subscriber to the AMERICAN TEACHER who will remit twenty-five cents. See blank on previous page.

THE WEAKEST STRENGTH.—Some one has recently said that in the olden time if a man could jump high he would try to jump the highest, but the test to-day is the strength of the weakest part rather than of the strongest. This is peculiarly applicable to teaching. We have lived nearly through the period in which a school was estimated by the brilliancy of the brightest; we have entered a period in which the test is the improvement of the average child in those branches in which he is not brilliant.

SARAH L. ARNOLD, whose portrait graces our columns this week, is unquestionably one of the most successful women in educational work in the country. The JOURNAL OF EDUCATION said of her recently: She combines the elements of the genius, the enthusiast, the scholar, the leader, and the adviser to a remarkable degree. It would be easy to find her equal in any one of these regards, but not in their combination. She teaches skillfully, supervises wisely, writes entertainingly and instructively, and lectures with fervency and good sense. She is still a young woman, with the best of success in her native state, —Massachusetts,—in the Saratoga Training School, and in her present position as supervisor of primary schools in Minneapolis.

GEN. JOHN BIDWELL, of Chico, Cal., sends his three-seated carriage and pair of fine horses with a driver round to the normal schoolhouse once or twice every week and takes all the teachers directly from their work for a drive of an hour or more,—and there are no finer drives any where. This is a luxury that would be appreciated by many teachers, and there are many men abundantly able to do it, if only their attention was called to it, or if they could realize how much it would mean of health and cheer to hard-worked teachers.—*Journal of Education.*

It is pleasant to see how genuine is the estimate a

little child places upon himself. A teacher was telling us recently of his experience with a boy. A shower came up suddenly one day, and a little five year-old asked his mother if he couldn't take an umbrella over to the school master. Permission was granted, and the umbrella was delivered in good time, and the teacher expressed his gratitude most heartily. In a few weeks another sudden shower arose and the umbrella appeared a second time. A few days afterward the little fellow accosted the teacher with the remark, "What would you do, Mr. O'Conner, if you were not acquainted with me."

Two young teachers in a village were teased about their inability to do farmers' work. They protested, and claimed not only equal skill but greater knowledge. A wealthy farmer, nettled by the positive statements of these "hide-thrashers," as he was wont to term them, offered them 300 bushels of wheat (or an equivalent in money), if they would thrash out that many bushels in his barn. No time was specified, but the two teachers went to work and thrashed daily after school hours, and did more and better work than average farm hands. The villagers were daily witnesses, and enjoyed the discomfort of the wealthy farmer who had to pay the forfeit.

AIM RATHER THAN METHOD—In this day of "methods, methods, methods," it should be kept in mind that it is worth infinitely more to know clearly just what is to be done than to know perfectly any of the details; in other words, the aim is of prime importance. In this active life we are quite sure to "get there" if we know the goal. The criticism to be made upon the work of the past has to do more with the aim than with the methods. We shall do well if we accomplish that which we attempt as thoroughly as it has been accomplished by the teachers in the past. Their methods equalled the emergency. What we want is a different aim, and then we can safely trust the methods.

THE BEFORE-SCHOOL AGE.

THERE are facts in psychology that every one should know; there are other facts, phrases, and fancies that are worse than useless to any one who is not posing as a specialist. There is no end to the array of people who can talk and write about "faculties," "concepts," "percepts," "introspection," and "environment," but there is a sad lack of people who can talk and write of children from careful observation.

There are three great dividing lines in a child's life, physically and mentally, marking off four periods. If one chooses he can make finer distinctions and run more lines, or, by being less discriminating, he may efface one of the lines and make but three periods.

At seven years of age there is the first dividing line. The indications are so clear, the boundaries so perfect, that there is no excuse for mistaking it. The first

period,—the first seven years,—is *plastic*. A child inherits much more than we think in some directions and much less in others. He inherits impulses rather than habits; tendencies rather than prejudices; tastes rather than temptations. We are accustomed to say, thoughtlessly, that a man was born a Democrat or Republican, a Southerner or Northerner, a Baptist, Unitarian, or Romanist,—all of which is far from the fact. His inheritance has little or nothing to do with any of these things. If twenty children at two years of age, born in twenty varieties of home, politically, socially, and religiously, were so interchanged that each would spend the years up to twenty in a home the farthest removed from the circumstances of his birth, he would be twenty times as liable to be what he was "brought up" as what he was "born."

On the other hand, impulses,—physical, intellectual, and moral birthmarks,—are inherited. The chief responsibility of the home, school, and church is the suppressing, modifying, developing, or tuning up, as the need may be, of the inherited characteristics of the child.

The *home* is entirely responsible for the child's growth and development in the first seven years. I have called the period "plastic," because at that time he is absolutely "fit for moulding," which is the root idea of the word. He does not retain impressions, but you can make any impression upon him that you choose, and if you will continue it until after he is seven he may be made to retain it.

Nothing could be more unlike physical perfection than a club-foot, and yet, taken in the plastic years, it can be turned, straightened, lengthened, limbered and made in form and elasticity like a perfect foot. But it must be kept there by constant attention until the plastic years have passed. The same with other physical deformities. In much the same way may mental and moral deformities be righted. Impatience, quick temper, surliness, timidity, coarseness are capable of being every way rectified by expert, persistent attention in those early years. The inherited tendency will always be there, but it can be placed under such control that the inheritance may not only not be suspected, but in that direction he may be the safest, freest of men, stronger indeed because of it and of his knowledge of its existence.

If the children came into the schools having had seven years of expert home watchfulness in the matter of disposition, temper, and impulse, what a difference it would make in the peace, pleasure, and profit of the schoolroom! Unfortunately, few homes do much to help these children, and many do much to intensify the wrong inheritance. The most that can be hoped for is that the average home can be induced to commit the care of the child to the kindergarten, which is a homelike school or a school-like home. Because of what the home is not, there should be a uniform, active effort put forth to secure for every child a kindergarten initiation into school life.

GUESSING CHARACTERS.

BY ANNIE M. LIBBY, MAINE.

A VERY pretty school exercise is carried on under the above title in this way: Twelve children are stationed in an ante-room. One passes in, and taking position on the platform, says:

I was one of the foremost officers in the war for the Union, though a small man. My men loved me and my horse, and should I name but *one* thing which I did in the course of my brilliant career, every one in this room would at once know my name.

(Here the child reciting makes a pause, and then striking an attitude, declaims:

"But there is a road from Winchester town,
A good broad highway leading down."

The school will, of course, give the name **SHERIDAN**, and the child goes off as another comes from the ante-room and recites):

I was a soldier, too, but I marched on foot while the general rode his famous black steed. I will tell you what I once did, however, for my fellow-soldiers. There was no money to pay the poor fellows who were enduring so many hardships. So I went to the quartermaster's tent and offered to furnish the money to pay my company, and the offer was gratefully accepted. But the people of America know me as an inventor of one of the most wonderful machines of the world, rather than as a soldier. I think that nearly everybody here has such a machine at home.

(The answer is **ELIAS HOWE**, of sewing machine fame, but as the children will probably say the machines in their homes are Singer's, etc., the teacher should explain that the Howe was the first, or among the first, invented, and that many improvements have since been made, enabling men to take out patents in their own names.)

Third Child.—If a man who suffered in the cause of right is a soldier, I was one in the highest sense; for I knew no voice but that of duty. I felt blame as keenly as any man, but neither praise nor blame made difference in my work. When my body was laid at rest in Mt. Auburn, a loved poet said this of me:

"God said: 'Break thou their yokes; undo
Their heavy burdens; I ordain
A work to last thy whole life through,
A ministry of strife and pain.'

"One language held his heart and lip,
Straight onward to his goal he trod,
And proved the highest statesmanship
Obedience to the voice of God."

Yes, under the cane of assassin in the Senate Chamber of the United States, when Massachusetts passed a resolution of censure upon me, or when men sang my praises, I obeyed the voice of conscience. And I succeeded in my work, and white and black bless the name of—

(Child pauses until the school gives the name, **CHARLES SUMNER**, when he bows and gives way to the next.)

A teacher will be able from this outline to take up any character wished, and the exercises may be varied greatly, being made comprehensible to children of ten or twelve years, or interesting to high school pupils. Authors, inventors, statesmen, famous women, actors, kings, queens, etc., may be taken up at different times, while the exercise is an admirable one for a French or German class, if French or German characters are taken and the descriptions given in one of these languages.

In arranging the exercise for a school exhibition or public visiting day, it would be well to have the school know the name of the person represented and, after waiting a little to allow the audience time to guess, have the name given by the school. When presented before the school only, if any name cannot be guessed, the teacher should encourage the pupils to look up the character for themselves.

SHORT METHODS.

TO multiply any number of two figures by 11, simply place the sum of tens and units between the two. When this sum is more than 10, of course the tens of the sum are added to the tens of the number multiplied as the hundreds of the answer, as $11 \times 25 = 275$; $11 \times 19 = 209$; $11 \times 29 = 319$.

In multiplying any number larger than 100 by 11, write the right-hand figure, add the two right-hand figures, then the second and third, third and fourth, etc., to the left, writing the last figure by itself. $2,345,321 \times 11 = 25,789,531$. When any one of these sums is more than 10, the tens, of course, are included in the next addition. $9,743,987 \times 11 = 107,183,857$.

To multiply numbers of two figures each when the right-hand figures equal ten and the left-hand figures are the same,—as 87×83 , 55×55 , 52×58 , 75×75 ,—multiply the right-hand figures and write the result; call one of the left-hand figures one more, multiply by the other, and write the result.

KNOW OR DON'T KNOW.

BY S. L. D.

Some know and *know* what they know.
Some know and *don't* know what they know.
Some know and *think* that they know.
Some know and think that they *don't* know.
Some *don't* know and think that they know.
Some *don't* know and *think* that they *don't* know.
Some *don't* know and *know* that they *don't* know.
Some *don't* know and *don't* know that they *don't* know.

MATCHING.

BY W. A. M.

HERE is a capital exercise. Make a good selection from some paper printed in good type. Be sure that the article is interesting, upon a subject on which the thought runs smoothly and consecutively. It should be written in a style somewhat simpler than that of the books they are using. Cut it from the paper, and then cut it into paragraphs of from four to ten lines each. Great care must be used that the paragraphs have a close and easily appreciated connection. Give these out promiscuously.

Each will read his paragraph to himself. Then the one who thinks he has the first will read it aloud. All will give close attention. As soon as he is through, the one who thinks his follows will read. If two think so, then the class must decide. When the second is finished, the one who follows will follow, etc.

We print such a story that may be cut up as indicated. There is much more pleasure and discipline in this than seems possible at first:

A LITTLE TRUE STORY.

But Edna didn't pay the least bit of attention. She went on crying even louder yet, if such a thing were possible. Mamma hardly knew what to think, because, you see, Edna is usually a very good little girl.

Then mamma began to count slowly, "One, two, three, four"—

Mamma looked at her little daughter sadly. "You must go in the closet, and stay there until you can be a good girl," said she.

Then Edna began to cry as loud as she could cry; but she took her little cricket and went into the closet, just the same. It was a dark closet when the door was shut, but mamma didn't quite shut the door. Edna kept on crying, however.

Edna was naughty one day, very naughty, indeed, for such a little girl as she is. I do not like to tell about it. In the first place she did not mind, and then she struck her mamma. Only think of it!

But before she got to ten, something funny happened. The old gray kitty, who had all this time been lying quietly before the fire, suddenly jumped up and walked straight into the closet. She caught Edna's wrist between her forepaws, and bit and scratched it,—not very hard, of course, but quite hard enough to surprise and frighten the little girl into keeping as still as a mouse for as much as a minute. Then the old kitty walked back to the mat before the fire, and curled herself down for another nap, and not until then did Edna find her voice again.

"My child," said mamma, pretty soon, "I want you to be more quiet." Naughty Edna cried all the louder.

"Didn't you hear me?" asked mamma. "I want you to stop crying this minute."

"O mamma!" sobbed she. "O mamma, I will be good."

"Very well," said mamma, trying hard not to smile; "you may come out."

So out of the closet the little girl came, and rushed straight into mamma's arms.

"I,—I will be good," she sobbed again; "but,—but I don't want that old cat boxing me 'round all the time, mamma!"

Mamma laughed then; she couldn't help it.

"Then you mustn't be naughty, dear," she said.



ALLAN DALE will have charge of this Department, but the questions will be answered by a variety of teachers of various grades. We have been in the habit of answering such questions by personal letters, or sending them to teachers to answer, but hereafter they will be answered through the AMERICAN TEACHER.

I have been in the habit of letting one of the children hear the chart class, and sometimes the primer. They are very anxious to do it, and I use this method as an incentive for them to study. They must always have good lessons, and their behavior must be such as will be commendable or they will not have the honor and pleasure of hearing said classes. There is a continual strife among the younger pupils to act so as to be worthy of hearing the classes. I have had some boys and girls in the school who would not try to learn. They would neither study at school nor at home. Their parents took no interest in their studies. I tried all kinds of ways to get them interested, but failed until I began letting little children who scarcely come up to their waists in height hear them read. They were able to do it because they had been through the book and knew every word in it. How indignant were those lazy children and their parents! Things were blue in this district for me, their teacher, as the children of one of the trustees were among the indifferent ones. However, I continued as I thought best in spite of the clamor. I told them as soon as I saw they tried to learn I would hear the class myself. They were all in one class, having been sifted from the second reader. I soon saw a marked change; the children worked hard, and their parents threatened to skin them if they did not (to use their own words). I was careful not to carry it to extremes, and always kept a watchful eye and a listening ear on the recitations. Will you be kind enough to let me see in the next AMERICAN TEACHER whether I did right or wrong.

D. E. S., New Jersey.

You did right to conduct your own school in your way, provided you did not conflict with the regulations of the trustees. By your firmness you have won the day, and by it you have established your authority. But has it been worth what it cost? There are many ways by which one may secure his point and a dogged persistence is one of them, but it does not follow that this is the best way. tact will be a valuable ally in your work. It is not necessary for you to antagonize your school to gain your object. I may say here that I do not believe in pupil teachers. The teacher is hired to instruct the pupils in the school, and she should not, she has no right unless authorized by the committee, to delegate her power and duties. Often a teacher may have a bright scholar help a dull one over a difficult lesson; but I do not think it is ever a good practice for a teacher to let her pupils hear certain classes. Do your work in your own way, and if you have too much to do, appeal to the committee for assistance. However, since you undertook to carry out a certain scheme, I am glad you succeeded.

Please give, through your "Talks with Teachers," some modes of punishment for misbehavior in school.

J. M., Baton Rouge, La.

If you really intend to punish your pupils because of their misbehavior, and you are unrestricted as to the method of administering punishment, let me suggest that you give them a sound thrashing any time an offence is committed. Don't spare the rod and so spoil the child. Thrash; you will have to do it often and severely, but you are doing as you elect to do, and your reward will be the approval of your own conscience. But — if you want to be a real teacher of children, if you desire to train your children so that they

will grow to be manly men, womanly women, don't punish. You can reach a boy's heart in some other and better way. When an offence is made, seek for the reason of it, and endeavor to remove the cause. Be gentle, but firm. Teach your children the beauty and value of self-control. Teach them how to restrain their evil propensities. Insist on obedience to authority and establish a habit of submission and respect for good order that will prevent serious infractions of it in the future. Treat your pupils as if they were reasonable beings, and educate them along the line of character.

What is the best method of teaching fractions? E. L. S. J.

There are many ways; but it all depends on the grade of your class. Fractions should be taught very early in the course; in fact the terms should be used when numbers are first studied. Children taught that one and one make two, should be taught that one-half of two is one, and so on with the larger combinations. The best plan is, of course, to use objects in illustrating the relation of parts to wholes and the use of the symbols or figures will easily and naturally follow. Use simple processes, and familiarize the learners with principles; omit puzzles and problems requiring intricate analysis. Don't linger too long with your objects, or charts, or fraction board. The best work will be done on paper or mentally.

My pupils have weak memories. How can I remedy this?

E. P. V., Clinton.

How did you train your own memory? How would you seek to improve it if you discovered it was weak? Apply a little common sense to the questions you put to me. Memory, you know, depends on attention, and attention is only a prolonged state of mind. In any subject, arouse interest, fix attention, and memory will wait on you afterward. Memory is like any faculty, strengthened by use, weakened by disuse. Concentrate your work, secure a "pin-head attention," and you will not have occasion to complain of defective memories on the part of your pupils.

Should children in the lower grades be instructed in manual training work?

ROBERT S. P.

Professor Woodward, at St. Paul, in his report recommended that manual training should not be taken up below the second grammar grade. This was vigorously opposed by many speakers, some of whom testified to the practical value of manual training to pupils of the lower grades. There was no conclusion reached, and the subject is left for the schoolroom to decide. What is your opinion on this question?

I am to teach an ungraded school the coming year. Have heretofore taught a graded school. Would it be possible for me to grade my new school?

COUNTRY.

I cannot tell you. You can best answer your question when you have examined your school and know the materials of which it is composed. I suggest that you combine your classes into as few classes as possible, and make promotions when fitness is assured.

Has the new Course of Study for the Primary Schools of Boston appeared yet? I am anxious to secure it. How can I obtain a copy?

PRIMARY, Newtown.

I saw a rough proof copy in June, and I presume it is by this time in print and ready for distribution. Write to Phineas Bates, Secretary of School Committee, Mason street, Boston.

When should promotions be made? That is, when should pupils be advanced to a higher grade, at the end of a term or during the term time?

NEW TEACHER.

Pupils should be promoted when they give evidence of being able to pursue the course of study in the class above them. It is wrong,

it is oftentimes cruel, to retain a boy in a class during an entire term when it is known that he is fitted to perform the work of an advanced class. The objection that out-of-time promotions break up a class, ought not to influence a teacher; the rights of the pupil are paramount and should outweigh any other consideration.

What shall I do with the bad boy who comes to me at the beginning of the term with a reputation for creating disorder? Shall I immediately show him I am aware of his evil propensities and caution him, or shall I give no evidence of my knowledge concerning him, and simply await developments?

TEACHER.

In law any man is held to be innocent until proven guilty. It is not only unfair, but it is the beginning of much trouble to say to a new boy, "I am aware of your misdeeds, and I know you to be a rogue; if I find you doing anything wrong I shall quickly show you how I deal with bad boys!" How know you that this boy may not have decided to begin anew in your class, to put aside old ways and have respect for order? You kill at once this desire, and antagonize the worst elements of his nature. Treat the boy fairly; don't judge him by his former misbehavior, and give him a fair show to reform.

A teacher can advance to higher positions by doing the best he can in each position, whatever the grade or salary; but how much sacrifice is one warranted to make in providing for a couple of years of schooling in a manual training school? The one asking advice is a man nearly thirty years old, who earned the money that put him to school. He has taught two years. He commenced with a salary of seventy dollars a month, and now gets eighty

SUBSCRIBER, Scott River, Cal.

I think it is better for you to continue in the line you are now succeeding in. You have shown commendable perseverance, and you have secured results that are not only flattering but are an earnest of a promising future. Plainly you are fitted for work in the schoolroom, and while the idea of manual training is an attractive one, it must not in your case intrude on your chosen line of work. There is yet no urgent call for manual training teachers; the supply equals the demand, and those who are best fitted for it are naturally gravitating toward it. If you desire, procure the published handbooks on manual training and study thoroughly the principles underlying it, meanwhile continuing in your present work.

In considering the wonders accomplished with printer's ink, due credit should be given to the Esterbrook Steel Pen with which the printer's copy was written.

Too much cannot be said against the cruelty of forcing children's feet into short and narrow toed boots. Many children, before they are ten years old have incipient corns caused by foolish pride or carelessness on the part of the mother. And as for putting on the ordinary corset on a growing miss, it is an outrage against nature, and without excuse, as *Corset Whists* can be found at every leading retail store. The Ferris "Good Sense" waist is undoubtedly the most satisfactory

KINDERGARTEN TRAINING.

The Kindergarten Training Class established by Mrs. QUINCY A. SEAW in connection with the school, 6 Marlborough St., Boston, will be reopened on Thursday, October 9, 1890.

THREE DIFFERENT COURSES WILL BE GIVEN.

1. A full course in Froebel's Philosophy and in the Kindergarten Gifts, Occupations, Songs, and Games, fitting students to take charge of a Kindergarten.
2. A course of lectures on the same subjects to mothers and women interested in the training of young children.
3. Weekly talks to nurses.

Music Department.

THINGS TO BE CONSIDERED IN THE MUSIC COURSE.

BY W. S. TILDEN, FRAMINGHAM NORMAL SCHOOL.

CONSIDER, first, where the pupil is now; second, to what point you propose to bring him; and third, by what steps he is to get there.

Consider the circumstances and conditions of the school, and in so far as you are unable to change them, adapt the topics, modes of instruction, and aim of the lessons to those conditions so as to accomplish the best that is possible under the circumstances.

Consider what things are really vital to the child's progress, and concentrate effort upon them, leaving, all extraneous things, as far as possible, however pretty the show that can be made with them, or however interesting they may be to maturer minds.

Consider that what is in itself simple and easy, may be made difficult to the learner by overmuch theorizing and explanation. The teacher may shed darkness rather than light around a subject by too many words. The common sense of the pupil must be relied on to perceive what is axiomatic; it cannot be made clearer by explanation.

Consider that in all teaching some things must come before some other things, and that we must proceed according to the educational law, "*the thing, the name, the size,*" and always in this order.

Consider that very much work must be done to associate firmly the *name* with the *thing* in music; in order to talk about anything it must have a name, and one that is entirely familiar to both speaker and listener, so that the name unmistakably calls up before the mind the image of the thing spoken of; then careful training of the eye is necessary in order that the written *sign* may call up the *thing* itself, and not merely the *word used as its name*.

Consider that while the thing, name, and sign are so familiar to the musician that the one suggests the other like an electric flash, it is not so with the pupil, and therefore the teacher must be always on his guard lest he outrun the ability of the pupil to follow properly, always grounding the shadowy written sign in the substance of a musical reality.

Consider that the terms employed should be few as possible, and used with unerring accuracy,—the same term for the same idea constantly. A loose use of terms makes "confusion worse confounded" to the learner, especially in childhood, when he will not sift words for himself and clearly discern their import.

Consider that the course in music includes a knowledge of singing by note, just as the course in language includes reading; yet as the knowledge of the alphabet and its

combinations does not constitute an adequate course in language by itself, so neither does the ability to decipher notes merely prove the possession of a desirable intelligence in music; nor does it alone constitute a proper course of musical instruction for schools. The teacher who stops with this stops short of his duty.

Consider that music, in its essential characteristics, is emotional rather than intellectual; the study of song in the schoolroom is not simply a pursuit or employment, but is designed to make the child happier and better by addressing that emotional nature which is so largely neglected in general school-work.



OUR FUTURES.

[For four little boys.]

BY E. IDELLA WALLACE, LYNN, MASS.

FIRST BOY.—Perhaps some of you people think,
Because we are so small,
We don't amount to anything;
But wait until we're tall,
And big and strong as some of you,
And then I guess you'll see
That boys that seem of no account
Of great account will be.
For I shall be a merchant,
And sail o'er all the seas,
And buy up all the pretty things,
The little folks to please.
When I grow up as large as you,
This is the wondrous thing I'll do.

Second Boy.—And I shall be a statesman;
I'll set the country right;
I'll fix up all the politics,
And for the truth I'll fight.
And justice then shall not be blind,
But see on every side,
Over each country fair shall rule,
And o'er the ocean wide.
King Money then shall not be all
That man will hoard and save,
But Wisdom,—while their gold shall be
A very useful slave.

Third Boy.—A merchant is a useful man,
But a farmer I shall be,
With my lands so broad, and barns all full,
Oh, who from care so free!
And with my ripened fruit and grains
I'll feed the needy poor.
A blessing they shall give to me
When turning from my door.
We may live without the precious gold,
And without worldly fame;

But for our daily wants and food
We bless the farmer's name.

Fourth Boy.—You boys will all be noble men;
You've each a brilliant plan.
Now I'll tell you I am going to be
A school committee man.
With squeaking boots and collar high
I'll come in at the door;
But I shall ask no questions, such
As boys ne'er heard before.
But, "Oh liren, flowers are in bloom,
The lambs are out at play,
And all the birds are singing,
Would you like a holiday?"
When I grow up as large as you,
This is the wondrous thing I'll do.

PERSEVERE.

[Exercise for five children.]

BY JANE E. GORMLEY.

FIRST CHILD.—This life was given us for work,
We cannot idle be,—
The high sun only brightly shines
For honest industry.
And dark and dreary is the road
Where idleness doth stray,
No ray of sunshine ever comes
To light its dreary way.

Second Child.—And life, I've read, 's a battlefield,—
And soldiers all are we,—
Each striving with both heart and hand
To gain the victory.
What if defeat comes rushing on
To sweep us like a tide,
Will we salute the conqueror
And throw our arms aside?

First Child.—No, though life be a battlefield,
A contest most severe,
Oh, you will gain the victory
If you will persevere.

Third Child.—And life, I've heard, a race-course is
Where each one wants to see
If he can only lead the race,
And then a winner be.
But what if stumbling-blocks arise,
And down we fall in pairs,
Oh, would you lightly give it up,
Or would you try again?

First Child.—Although a race course life may be,—
With dangers ever near,
Oh, you the winning-post will reach
If you will persevere.

Fourth Child.—And life is like an ocean wide,—
We sail from shore to shore;
Some drift where gentle breezes blow,
And some where billows roar;
But what if breakers wash the deck
And threaten mast and sail,
Will we stand steady at the helm,
Or give up to the gale?

First Child.—Although life be an ocean wide,
With tempests dark and drear,
Oh, you a harbor safe will reach
If you will persevere.

Fifth Child.—And life is like a mountain steep,
And weary travelers we,—
All trying with the earnest hope
Its summit fair to see;
But when both faint and weary grown,
Oh, will we turn aside,
Content to loiter down the slope
And at the foot abide?

First Child.—Although life be a mountain-path,—
So rugged, dark, and drear,—
The summit you will safely reach
If you will persevere.

All.— So if life be a battle-field,
Or ocean vast and drear,—
Oh, we will master all its storms
If we will persevere!
And if it be a mountain steep,
Or race with dangers near,—
Oh, we'll remove all stumbling-blocks
If we will persevere!
So then away with idleness,
Of work we'll have no fear,
For it alone will teach us all
The way to persevere!

LITTLE THINGS.

[A recitation for three pupils.]

BY KATE L. BROWN.

THE SPARROW.—Only a little sparrow,
The tiniest bird of all;
Yet the Heavenly Father loves me,
And hears my faintest call.
If I fly through the endless ether,
My track He sure can tell;
If I rest 'neath springing grasses,
He knows my place full well.
So I chirp in joy and gladness,
No danger can I see,
For the Lord of earth and heaven,
He loves and cares for me.

The Lily.— Only a little lily
That springs 'neath careless feet;
Deep down in the meadow grasses,
My breath so soft and sweet
Steals like the sacred incense
Upon the summer air,
Or the calm of a holy silence
That follows after prayer.
I know I am weak and tiny,
Yet safety do I see;
For the Lord of earth and heaven,
He loves and cares for me.

The Seed.— Only a little seedling,
That fell in the waiting earth,
Till the dews of a kindly heaven
Gave the new plant its birth.

Deep down in the mould it waited,
Till it heard the word, "Arise!"
Then it climbed in strange new beauty
Toward the sunny skies.
It was not afraid or lonely,
For very well it knew
That the God of the bird and lily
Would guard and love it, too.

Together.— Only the little things of earth!
Yet heaven, it seems to me,
Is made of countless tiny acts
Of love and purity.
Kind words from precious, childish lips,
Kind deeds no tongue can tell.
Rest safe and happy, little hearts,
ONE loves and guards you well.

A WONDERFUL LAND.

BY LAURA F. ARMITAGE.

I VISITED a lovely land,
Whose skies were blue and fair;
The grass was green, the lambskins played,
And flowers bloomed everywhere.

And everything was bright and gay,
And children played about,
With happy faces all the time;
I saw no tear or pout.

No thorns upon the roses grew,
No clouds were in the sky;
The birds sang joyously all day,
While brooks went rippling by.

No lessons hard were there to learn;
No work of any kind;
No naughty girls could there be seen,
No bad boys could I find.

No quarreling was seen or heard,
For all loved one another;
The boys did not their sisters tease;
Each girl smiled at her brother.

"Where is this land?" you ask, no doubt;
Well, that is hard to say,
Although I truly saw it when
I fell asleep one day.

THE FISHER.

[From the German.]

BY E. IDELLA WALLACE.

ONCE a fisher in a brook fished the whole long day,
Not a single bite had he for all his work to pay,
Till at sunset one small fish came with longing look,
Nibbled, tasted, and, alas! soon hung on the hook.
"Oh," plead he, "dear fisherman, please to let me go;
I am such a little thing, give me time to grow;
But three mouthfuls would I make, served up in a dish;
Let me back into the waves; grant this little wish!"

So the fisher thought awhile, then to him did call,—
Risk much to let you go, but you're young and small,

And though now I let you swim far out to the sea,
One year hence you must return to this place for me."
Light of heart the little fish gayly swam away
In the coolness of the waves, full of glee and play.
When a year had passed and gone,—his one year of grace,—
Remembering his promise he came unto the place.

There the fisherman did wait, with his line and hook,
In the dancing brooklet casting many an anxious look,—
"What!" said he, "you've kept your word,—given your life to me!
Lo, I give it back again, little fish,—go free.
Since so faithful you have been, thus to keep your vow,
Mercy I will show to you, little one; so now
Swim and frolic in the waves long as you may live;
He who keeps his word deserves all that I can give."

THE FAITHFUL LITTLE MOTHER.

BY ANNIE SCHLESURGER.

I CAN'T play "Lady come to see,"
When Dolly's sick in bed;
And I can't take her out with me,
With such a bound-up head.

I know she'd cry her poor eyes out
If I should go away;
And so you see I can't go out.
Excuse me, please, to-day.

I'm sorry that I cannot go.
I hope you'll think of me;
But Dolly's first, as you must know,
Then—going out to tea.

I've had the doctor twice, to-day.
"Poor Dolly's ill," he said.
"Unbraid her hair, and right away
I'll bandage up her head."

I almost cried out loud to see
My dear child suffer so;
So there's no use in begging me
To leave her now and go.

"I'll be a good mamma," I said,
"If Dolly's given to me."
I promised not to leave her bed
If she should fretful be.

I'll keep my word now she is sick;
I will not go away.
I think 'twould be an ugly trick
To leave my child to-day.

"A DAY OLDER MEANS A DAY BETTER."

BY E. IDELLA WALLACE.

CAN you guess the reason why, every day,
When I make a figure or letter,
Or do any work with slate or with book,
Every day it's a little mite better?

Mamma couldn't guess, and I see you can't.
Well, this is the reason, I told her,
"It has to be better than yesterday
Because I am just a day older."



[The teacher will find it pleasant, as a variety, to silently read the stories, or selections, then repeat in her own language before the class, which in turn reproduces, orally or in writing.]

REPRODUCTION EXERCISES.

BY M. E. C.

SOMETHING ABOUT A BOAT.

[Adapted.]

[For lowest grammar grades.]

[Read to the class; talk it over with blackboard illustrations introduced to emphasize information points. Pupils reproduce in letter form; allow them to add *their* summer experience. The aim of this selection is to connect the closing exercises of school with the opening by drawing from the children their experience between those periods. A most interesting information talk may be had as an oral language exercise before the day for writing comes, as each child will have his word upon the subject.]

Boys usually like to sail a boat, and nearly every boy who has helped some older person, thinks he knows all about it; but put him aboard a sailboat alone, and the chances are he will come back a sadder and wiser boy? Of course a boy can learn to sail a boat without instruction, but it is pretty dangerous and better not be tried. The boy who wishes to be a yachtsman should also desire to be an able one; therefore let us board our boat, and, as the sailors say, "see what she'll do."

Our boat is a catboat, for that is used more than any other kind of yacht in America, and of course you want to learn all about it. The catboat has one sail. This is set on a mast and stretched out upon a boom and a gaff. There are three ropes in the rig of such a boat; two to hoist the sail, and one to "trim it," that is, to fasten it where you want it to be. The hoisting ropes are called "halyards"; the one which lifts that part of the sail next the mast being the throat-halyard; the other, which lifts the end of the gaff, being named the peak-halyard. The third rope is the mainsheet, and by means of this you "work" your boat. The boat should also have a topping lift, which is a rope fastened to the boom, run through a pulley in the masthead, and thence to the deck. It is to lift the boom when the sail is lowered or when an emergency requires. The rig, as you see, is simple, yet the catboat is one of the liveliest contrivances you ever tried to ride. A bicycle, or a skittish horse, would be tame in comparison.

A boat in sailing never goes in but one direction,—forward. Sailing vessels are not meant to move backward. Remember this. An old waterman once said to me, "My lad, when you're sailin' a boat alway do one o' two things,—keep 'er a-goin', or down with your sail." There is good sense in that, for nearly all the upsets occur from not "keepin' 'er a-goin'," or by leaving the sail standing when it should be down. You see, a boat under way is manageable, while if at rest upon the water it not. If your sailboat does not go, you cannot steer her; and if you cannot steer a boat she will capsize if struck by a squall. Therefore make it a point always to keep your sail full, in order that your boat may be under your control.

A GAME OF TAG.

[Adapted.]

[Read orally; reproduce in writing]

While loitering about the woods one day we were very much amused by three chipmunks who seemed to be engaged in some kind of game. It looked very much as if they were playing tag. Round and round they would go, first one taking the lead, then an-

other, all good-natured and gleeful as school boys. There is one thing about a chipmunk that is peculiar; he is never more than one jump from home. Make a dive at him anywhere, and in he goes. He knows where the hole is, even when it is covered with leaves, wise little fellow that he is!

CYCLING.

[Adapted.]

[Two lowest grammar grades.]

[Allow a member of the class to read orally. Fully discuss and introduce illustrations. Then ask class not only to reproduce but add their experience or that of any member of their family during the summer. This sort of exercise leads pupils to investigation and to closer observation of everything around them, and brings the teacher into closer relationship with pupils' interests. The selection abounds in suggestions to the tactful, progressive teacher.]

There is no way in which you can see a country in all its beauty so thoroughly and pleasantly as from a cycle. Wherever you may be you can always count upon finding roads bad enough, it is true, but there is always at least one road over which a wheel can be driven, and on your cycle you can jump in the late afternoons, after school hours, and off you can go, slowly and carefully at first, where street cars and wagons block the way; but before very long you will have ridden past the rows of houses, shops, and factories; paved streets will have become country roads, and you will see, instead of bricks and mortar, the fresh green of trees and pastures; you will carry yourself along at a speed that will be a pleasure in itself. For in cycling, if you are a good rider, there is as much excitement and exhilaration as in coasting, tobogganing, skating, and sleighing. Besides the delight of the exercise, if you keep your eyes open you can learn so much by the way. You can watch, day by day, the buds of spring opening into the blossoms of summer; the rich green of June meadows ripening into the yellowing wheat of August; the golden and scarlet glory of autumn fading into the dull grays and browns of winter. You may make yourself familiar with the beauty of the tree foliage, or get to know all the sweet wild flowers that bloom by the wayside, until in their seasons you look for their coming as for that of so many old friends. You will learn to know and value the grandeur of great cloud masses, the serenity of a clear sky, and the beauty of distance. In a word, you will soon begin to love nature as do all those older people who have spent many hours in the open air. You will also find that your journeys, long or short, will teach you much of the history and romance of other days, for you cannot go far without passing over ground or coming to places rich in memories of the past. And when the country is beautiful and towns picturesque you cannot help wanting to know what these memories are; what men thought and did who lived there long before you were born. The world is one great book of beauty and romance, and on your cycle you can gradually master it, chapter by chapter, volume by volume.

THE HUNTER AND THE PARTRIDGE.

Mother Partridge came from the field to the roadside and met the hunter. "My dear hunter," said the partridge, "please don't harm my children. They are so beautiful. I cannot tell you where they are; but you can judge for yourself. They are the prettiest birds in the field."

The hunter answered: "Well, if I should chance to come across your youngsters I will spare them."

Gratefully the old partridge flew up and away. When she returned at night, she met the hunter again, and he carried the young partridges on a string, all dead.

"Oh, you false and cruel man," cried the grief-stricken old bird, "why did you shoot my children? Did you not promise you would spare them? Oh, my poor children! My poor dead children!"

"But," said the hunter, "did you not tell me your young ones were the most beautiful birds in the field? I only killed these ugly gray birds."

Then said the old mother partridge: "Ah, well, to every mother her children are the prettiest."

the membership is restricted to descendants or collateral relatives of Revolutionary ancestors. R. S. M., *Bethel, Pa.*

Credit to C. L. F., *East Peoria, Ill.*; C. R. A., *Endicott, Neb.*

667. Why was not Washington inaugurated until April 30?
I. M. B.

Owing to non-arrivals of members of the first Congress no quorum was had until the 1st of April. After declaring the result of the electoral vote, messengers were sent to notify both Washington and Adams of their election. Adams reached New York on April 20, and took his seat on the following day. Washington reached New York, April 23. Arrangements for his inauguration not being complete, the ceremony did not occur until the 30th. It was not until April 6 that a sufficient number of members of Congress arrived in New York to form a quorum and count the electoral votes. Washington was elected. His journey from Mount Vernon took a number of days. R. S. M., *Bethel, Pa.*

Credit to A. J. R., *East Holland, Mich.*; C. L. F., *East Peoria, Ill.*; E. G. W.; *North Dorset, Vt.*

668. Why did President Hayes take the oath of office privately, the day before his public inauguration?

March 4, 1877, being Sunday, the public inauguration not occurring until the next day, it was thought best, to avoid possible complications, for Hayes to take the oath privately on the 4th. He took it again in public on March 5. C. L. F., *East Peoria, Ill.*

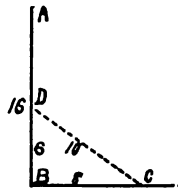
Credit to Eva D., *N. Lisbon, Mich.*

669. What is meant by the "Woolly Heads," the "Stalwarts"?

"Woolly Heads" was a name applied to those Whigs led by Wm. H. Seward who were opposed to the policy advocated by some of the party leaders of letting the slavery question alone. The Stalwarts were a faction of the Republican party led by Roscoe Conkling and others who favored the nomination of General Grant for a third term. Their opponents, under the leadership of James G. Blaine, were called Half Breeds. C. R. A., *Endicott, Neb.*

670. A pole is 16 feet high; how far from the ground must it be cut so that the pole resting with one end on the pole will strike the ground just eight feet from the base of the pole?

Let A B be the pole 16 ft. high; B C the distance 8 ft.; and D C the part of the pole cut off, resting one end on the pole and the other end on the ground. D B C is a right angled triangle, the base of which, 8 ft., is given, and the sum of the other two sides. The principle may be stated thus: The length of the base and the sum of the other two sides being given, to find the length of the other sides. Divide the square of the base by the sum of the other two sides and it will give the difference of those sides; one half the difference added to half the sum will give the hypotenuse, and half the difference subtracted from half the sum will give the length of the perpendicular: $8^2 = 64$; $64 \div 16 = 4$; $\frac{1}{2}$ of 4 = 2. $\frac{1}{2}$ of the sum, 16 ft., = 8 ft. $8 + 2 = 10$, length of hypotenuse. $8 - 2 = 6$, the height of perpendicular; or height where pole must be cut off.



J. D. C., *Lilly, Ill.*

Credit to E. G. W., *North Dorset, Vt.*; A. W. K., *Girard, O.*; H. A. L., *Ogdensburg, N. J.*; J. L., *Springfield, Mo.*; L. E. G., *Parkersville, N. Y.*; C. L. F., *East Peoria, Ill.*

672. Who was President from 1787 (the adoption of the Constitution) to 1789?

There was no regular president till Washington's administration (1789-1797).

Another Ans.—The presidents of Congress from 1787 to 1789 were Arthur St. Clair of Pennsylvania, and Cyrus Griffin of Virginia.

C. L. F., *East Peoria, Ill.*

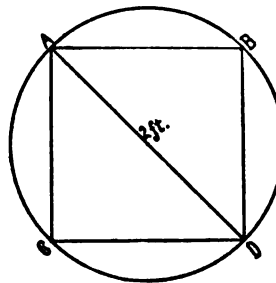
Credit to A. J. R., *East Holland, Mich.*

673. What President in his inaugural called attention to the fact that he was the first one born after the Revolution?

Martin Van Buren, born Dec. 5, 1782.

F.

677. What fraction of a round log of uniform thickness is the largest squared stick which can be cut from it?



The diagonal of the largest sq. that can be described within a circle is the diameter of the circle. Area of circle ABCD, diameter being 2 ft. $(2)^2 \times .7854 = 3.1416$. Area of square ABCD $[\frac{1}{2}(2)^2] = 2$. $\frac{2}{3.1416} = \frac{2}{87}$, nearly, = $\frac{14}{22} = \frac{7}{11}$ or .630+.

Since circles and squares are always similar to each other, the

answer to the question is $\frac{7}{11}$.

Credit to J. L., *Springfield, Mo.*

682. Name four places in which a possessive noun should be written without the apostrophe.

County jail, city police, state officer, town trustee. Usage has sanctioned the omission of the apostrophe. N. M., *Chico.*

QUERIES.

686. What is the origin of the phrase, "All for Buncombe"?
687. Who was the only woman in the United States to whose memory a monument has been erected by the public?

688. What are the states that have increased the least in population during the last ten years?

689. What was the price paid for the first slaves brought to America?

690. He struck me a hard blow. Parse "me" and "blow."

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By the Board of Education of

CITY of BROOKLYN, N. Y.,

At its June meeting, 1890.

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691. There have been two equal annual payments on a 6% note for \$175, given two years ago to-day. Balance due, \$154.40. What was each payment?

692. Can a person increase the weight of the brain by study?

693. Why do not the authors of physiologies agree as to the number of bones in the human body? Some authorities give the number as 206; others give 208, 211, and 216. Which is correct?

694. Explain what is known as the "Australian system of voting."

695. If 12 oxen eat $3\frac{1}{2}$ acres of grass in 4 weeks, and 21 oxen eat 10 acres in 9 weeks, how many oxen can eat 24 acres in 18 weeks, the grass growing uniformly? W. R. S.

696. Write a sentence with a verb in the imperative mode, third person singular, and parse it. C. E. R.

697. Three men, A, B, and C agree to reap a field of wheat for \$9.84; A and B calculate that they can do $\frac{2}{3}$, A and C that they can do $\frac{1}{3}$, and B and C that they can do $\frac{1}{4}$ of the labor. How much should each receive, according to these estimates?

698. What is the office of the underlined phrase in the following sentence?

"Then Evangeline lighted the brazen lamp on the table, Filled, till it overflowed, the pewter tankard with home-brewed Nut-brown ale, that was famed for its strength in the village of Grand Pre;

While from his pocket the notary drew his papers and inkhorn, Wrote with a steady hand the date and age of the parties, Naming the dower of the bride in flocks of sheep and in cattle."

M. Red Bluff, Cal.

699. Does history record the falling stars, which occurred about 1880-3? If so who is the author?

700. Name first negro child born in the U. S.

701. Who taught first school in this country?

702. Which is the best plan for transacting a commercial business, a corporation, or firm? M. M. M.

703. Who was it called the English language "the grammarless tongue"?

704. What is the difference between a teachers' institute and a teachers' association?

705. When and where was the first public normal school in the United States established? J. L.

706. When was the Declaration of Independence signed by the members of the Continental Congress?

707. Why are criminals hung on Friday?

Knots and Tangles.

Original puzzles, answers, and all other correspondence relating to this department, should be indorsed "For Knots and Tangles" and addressed to Puzzle Editor, Box 836, Sharon, Pa.

85. TRANSPOSITIONS.

A woman with very red face,
Walked past my house one day;
A little dog clung fast to her gown,
Nor could she get away.
At last she declared, "I will not go
Another first this day,
Till somebody comes,—I don't care who,
And takes this next away!"

86. DROP-LETTER PUZZLE. [Poets.]

1. J — h — G. — a — a.
2. W — l — i — m — u — l — n — r — a — t.
3. — o — n — w — i — t — e —.
4. — o — g — e — l — w.

87. DECAPITATIONS.

A large third tree stood in the road,
Not far from my humble cot;
A traveller passing 'mid a storm,
A shelter secondly sought.
The lightning played along the sky,
With a first it struck the tree,
But strange to say the man escaped,—
A hardware drummer was he.

88. HIDDEN STATES (Reserved).

1. John G. Saxe tells some funny things.

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2. O, I hope he will soon be better.
3. Of all men I am in the hardest place.
4. Mary can aid nicely in doing your work.
5. The raw ale did not answer the purpose.
6. John has a snake preserved in alcohol.
7. Oh, a dime isn't much to spend!
8. Aw! O! I beg your pardon,—I did not see you.

89. CHARADE.

Our landlord made his rounds to-day;
Mike likes him none too well.
He thinks his seconds are too high;
So when he rang the bell,
Mike whispered, "Sic em!" to his first;
And he rushed at the man.
And the whole report is, they'll take it to court,
And settle it,—if they can.

ANSWERS TO JUNE PUZZLES.

80. Cream, pitcher, ream, pit, her, he, pitch—cream-pitcher.
81. (1) Manners often make fortunes. (2) Idleness is the parent of many vices.
82. Henry, Charles, Lincoln, Florence, Seine, Green, Society, Boise (boys), Red, Black, Ann, Columbus, Austin, Farewell.
83. Florida, New Orleans, Indianapolis, Altoona, Bay State, Sudbury, Red: An island is a portion of land surrounded by water.
84.
- | | | |
|------|------|------|
| I. | II. | III. |
| BEST | BIRD | EAST |
| ETTA | IDEA | AREA |
| STAR | REAR | SEAL |
| TART | DART | TALE |

Answers have been sent in by Mrs. J. Wells Casares, B. E. Goodine, Mary A. Lyon, J. W. C., and C. D. Garrett.

The Kindergarten.

A GOVERNMENT BILL has been introduced into the Hungarian Diet making it obligatory on each of the 12 000 communities in Hungary to have a kindergarten, and on parents to send to it all children between three and six years old, if not otherwise properly taken care of. The measure being compulsory is a new departure in legislation in regard to kindergartens. The number of kindergartens now existing in Hungary does not exceed six hundred.

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BY MISS SUSAN P. POLLOCK, WASHINGTON, D. C.

IN the kindergarten the child should not be confronted with the cubes of the Third Gift until he has seen it as a whole in the Second Gift, nor with the hard ball until he has had the soft ball. The knowledge gained with the Second Gift assists him in analyzing those introduced later, and so on through the series of Froebel's twenty gifts and occupations. If the child's education is begun and continued according to Froebel's system, his individuality will assert itself and compel him to fill his place as a part of a whole. Much depends on the teacher's treatment of the child, the same as the development of the

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plant depends on the gardener. It is possible to destroy the vitality of the plant by the injudicious use of heat and moisture, and it is also possible to destroy the power of the child's mind by the injudicious applications of the requisites for its development. Education cannot create these powers and impulses, but it should bring them out and progressively develop them.

SCHOOLISHNESS IN THE KINDERGARTEN.

[An Abstract.]

BY SUPT. W. N. HALLMANN, LA PORTE, IND.

IT was the purpose of the address to direct attention to certain short-comings in the kindergartens of America based upon excessive intellectualism that takes pride in wordy phrases and formulas and neglects the sensibilities and the will, that emphasizes mere knowledge and disregards life efficiency. This tendency or condition is schoolishness. In order to justify this term, the work of the traditional school that lays exclusive stress on the giving of information was analyzed and contrasted with the rational school based on the application of Froebel's principles; and Dr. Harris' paper, read last year at Nashville, in which it was claimed that the primary school required a radically different method from that of the kindergarten, was reviewed. The address took the opposite ground, and labored to show that both should be con-

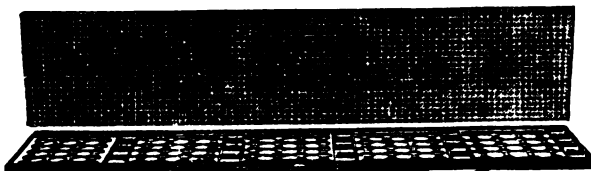
ducted on the same principles. The address then proceeded to show in what particulars the current kindergarten is a victim of schoolishness, i. e., "lays undue stress on the mere giving of information, makes a great show of authority over the child, or isolates the child in his work." It showed how games were learned like lessons, how gifts were made subjects of instruction and the like. The paper concluded with the demand that the mission of the kindergarten was to emancipate the school itself from the various sins of schoolishness, to secure "a regeneration of the school on the basis of the new education which would add to culture efficiency; to knowledge, character; to representative skill, creative fervor; to sight, insight and foresight; to industry, purpose; to talent, genius; to freedom, power; to individual thoroughness, social intensity; to justice, benevolence; to the love of self, the love of man and of God."

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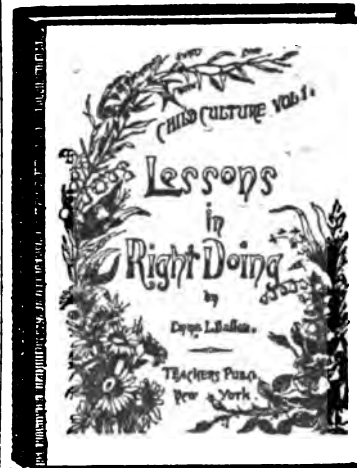
Under the cover are five square spaces, employing five children at once. Each space contains five square and twenty cup like receptacles for the articles found in the drawer, besides an oblong curved hollow for wire rods. Between the cups across the table from right to left are grooves for receiving printed cards bearing arithmetical words and signs, and between the grooves running from front to back are holes in which wires for holding objects may stand. The drawer of the stand is divided into compartments, well filled with marbles, buttons, small spoons, printed cards, small slates, and other apparatus for work. The drawer also contains a box of printed words and letters for the construction of sentences and words, as well as a handsome clock dial, by means of which time may be easily taught. The clock dial has a wooden pin in the frame by which it stands upright in the table.

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physiology and *anatomy*, with special reference to the child in health and disease; *psychology*, *logic*, and *ethics*, *history*, and *science of education*, with special stress on the period from Luther to our day, and to Froebel's educational principles and practice; *music*, with special reference to laws of *rhythm* and *harmony*.

II. It should impart skill in *composition of stories*, *rhymes*, and songs for children; *singing* and intelligent use of *one* musical instrument; *drawing*, free-hand and mechanical, with special reference to *blackboard sketching*; *clay modeling*; *coloring*, with special reference to nature sketching; *sloyd* and the manufacture and handling of simple physical apparatus; the "Froebel's schools of work"; *calisthenics* and light gymnastics, with special attention to marching.

III. It should give opportunity for the *observation* of methodically arranged model work in kindergartens and primary schools controlled by the training school and taught by an experienced and approved kindergartner and teacher.


IV. *After* a period of such observation, not *shorter* than one year, it should afford opportunity for suitable work of assistance and directions according to the pupil-teacher's ability, in some kindergarten or primary school under the supervision of the institution. This practice-work should be arranged in such a way and extend over a sufficiently long time, with the same children, as to

enable the pupil-teacher to feel her responsibility to the children so that she may learn to direct her work to the *children's development*, and not to the *subject of instruction*.

V. No pupil should be admitted before the age of eighteen, and the course should not be less than two years.

OUR KINDERGARTEN.

BY M. E. C.

" H! we don't mind the expression; we only get at the words the first year,—the expression comes later," said a first-year primary teacher as apology for what seemed to us poor reading.

We had from training and experience been led to believe differently, and knowing that we were to be leaders in the kindergarten about to be established in the neighborhood of this teacher, we determined to investigate, so asked, "Why can't the children give good expression from the first?" and were told that half the children didn't know anything about the objects the words stood for.

"Very well," we said as we walked back to the room we were making ready for the kindergarten, "that teacher shall not offer that excuse with her next class, for we'll

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make it our especial aim to cultivate the right sort of knowledge."

We had meant from the outset to make the kindergartens training a leading up to and almost a beginning of our children's primary school life, since we'd become weary of hearing teachers say children from kindergarten were worse than those coming directly from home. We knew it shouldn't be so, and laid our plans accordingly.

First, we decided that a thorough knowledge of the neighborhood,—its general make-up, and occupations as well as local peculiarities,—was quite as essential as an understanding of child-nature, if we meant to succeed. Second, we determined that good, practical common sense should be a dominant characteristic of our kindergarten work. Therefore, we began to haunt the streets, study the shop-windows, and question the children about their play, and what was being done in buildings into which we had not the courage to force an entrance just at first. Our next move was to study the outline of study for not only the first, but middle and upper primary classes. Finding ourselves familiar with that, we obtained a first chart and reader of the kind used in the primary classes of the city. The words to be developed in the first reading exercises were *man, cat, dog*, etc. Now from the very earliest time of kindergarten life the children were to be developed toward an end, and that end was the power to be good beginners in the primary

school in a moral, mental, and physical sense. How to get it was the thought.

Remembering always that we were kindergartners, we said "we'll study primary teachers, their needs, ways, limitations, and the results they arrive at. They won't come to us, so we'll go to them." We asked them, therefore, for a list of words as they "took them up"; then selected *cat* as the first avenue to development in our kindergarten. Some toy cats, pictures of cats on cards, and drawings (very rough) of the same animal were distributed about the room,—never grouped, but always standing as the representation of *one*. Then we provided ourselves with several rubber balls of various sizes, as well as with a great many worsted balls, stringless. There was chalk, plenty of blackboard space, and a great quantity of rough, Manila paper and pretty colored crayons.

When the first day came the principal sat at one end of the room, which had been made homelike with a little decorating, and the nurse stood by one entrance door to greet and direct the new comers to the principal, who took the name, age, and residence of each applicant, and gave it a cheery welcome. A child, borrowed from the master's room, next showed the way to the dressing-room, where the first lesson in the orderly disposal of outside apparel was given before the child was seated and the mother shown out,—(it isn't desirable to have the room filled with members of the family). The assistant

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now initiated the children in the delights of a game of "roll the ball" and "catch the ball" with the rubber toy. In less than an hour, owing to the systematic manner of conducting affairs, the principal took her seat and told a story of a cat that enjoyed playing ball in very much the same way the children did.

Various children tried rolling the ball in a nice way to each other, while both principal and assistant sang the appropriate songs. The pictures were talked about, and somebody asked if she would like to make the picture of a cat. Of course this opened up an opportunity for endless trying, and teacher and children began to get acquainted.

Very many volunteered information about the cat at home, and just here the principal began her work toward the development of intelligent reading by carefully drawing out the cat's characteristics. By natural steps the idea of the cat playing with a mouse, as well as with a ball, led to the beginning of learning the game of "Kitty White,"—the old, old game, but ever a delight to children not surfeited with physical culture.

The morning wore quickly away, and when going-home time arrived the children (all but those who had retired to the nurse's arms to weep out their loneliness) had most of them been children and cats playing with balls and a mouse. They had received the first lesson,—though no one but the teachers would have suspected it, in the

mental and physical training through the cat talk and game, and a continual recurrence to *one* ball, *one* cat, *one* mouse; their power at manual skill through the attempt to draw on blackboard and bits of paper, (at tables and from imitation); and moral, through the introduction of the ideas of being gentle in play and sharing the fun with some one.

Having a knowledge of the neighborhood and the needs of the primary school, the kindergarten leaders were able to adapt all their kindergarten work to the time and place; each talk, game, and exercise became a drawing of the child's experience into form that he might grasp ideas naturally, (deal with the known before the unknown), and gain an "all the way round" development.

From what he knew through his experience gained in his own little world, he was led into another world of new ideas.

At the end of the first month there might have been found in the kindergarten note-book these items, much like those to be seen in a primary teacher's book: "Gained results in language (reading), object lessons, number, manual skill, (gain toward easy handling of pens and pencils), physical culture, music. Observation, memory, expression, attention, moral grace have all been developed, and still there has been no sacrifice of the true kindergarten spirit in our work."

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The Kindergarten Department of the National Educational Association held a very successful meeting, of two sessions, at St. Paul, July 18-19. Mrs. Eudora Hallmann presided, and congratulated the members upon the marked advances made in kindergarten work during the past year.

Mrs. Helen E. Starrett of Chicago read a paper on "An Outside View of the Kindergarten."

Miss Lucy E. Wheelock of Boston gave a "talk" on the topic, "Eyes Have They and See." No mere outline can convey any adequate idea of this inspiring and instructive paper, the substance of which we hope to publish in the TEACHER later on.

Irwin Shepard, principal of the Winona (Minn.) Normal School, spoke on "The Effect of Kindergarten Training upon Primary Work." Read an abstract of his practical and wise opinions in another column of this number.

The second session was devoted to papers by Miss Anna E. Bryan of Louisville, Ky., on "The Letter Killeth." It was a timely discussion of the Froebel system.

"Schoolishness in the Work of the Kindergarten" was the theme of an able, philosophic paper by W. N. Hallmann, superintendent of schools of La Porte, Ind. See abstract in another column of this issue of the TEACHER.

The closing address was made by W. E. Sheldon, ex-president of the department. Topic: "The Institution and Methods of Training Teachers for Work in the Kindergarten and Primary School."

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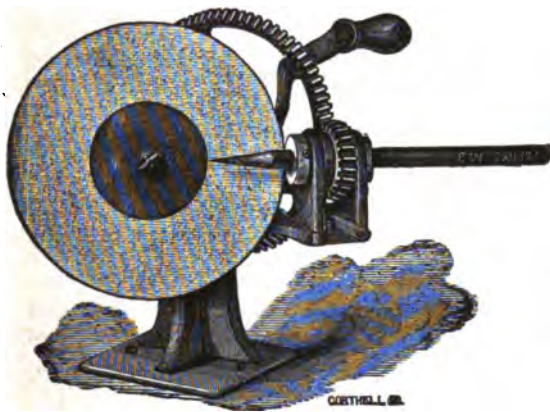
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AMERICAN TEACHER



VOL. XIV.

DEVOTED TO THE METHODS AND PRINCIPLES OF TEACHING.

No. 2.

THE COTTON PLANT.*

WELL may fare the cotton plant,
Bravely may it grow,
Bearing in its seeded pod
Cotton white as snow.

Spin the cotton into thread,
Weave it in the loom;
Wear it now, thou happy child,
In thy happy home.

Thou hast worn it well and long;
Are its uses past?
No; this well-worn cotton thing
Is a book at last.

Sort and grind and pulp the rage,
Weave the paper fair;
Now it only waits for words
To be printed there.

Thoughts from God to man sent down,
May those pages show;
Well may fare the cotton plant,
Bravely may it grow.

May ten thousand cotton plants
Spring up fresh and fair,
Thoughts of purity and love
O'er the world to bear.

* Reprinted by request.

OCTOBER.

BY LUCY E. TILLEY.

WITH wide, hurt eyes October hurried down
Ere yet the sun had warmed the half-waked morn,
Amid the withered pastures and the corn,
And through the meadow stubble scared brown.
No bird gave welcome to her weary feet,
No flower looked up and laughed as she went by.
Then did she turn her backward with a sigh,
"Shall my fair borders shelter naught that's sweet?"
She whispered, "Never flower or song or bird?"
But even as she spoke, with tender thrill
The pitying asters' hearts began to fill;
The flutter of the petals swift she heard,
And as they leaned their purple 'gainst her gray,
October smiled full glad and went her way.

ZACHARY'S FIRST YEAR IN SCHOOL.—(I.).

BY SARAH L. ARNOLD.

HIS mother watched him anxiously as he trudged manfully up the street, this September morning. Zachary was five in August, quite old enough to go to school, the wise people in Massachusetts said. There were no kindergartens in Littleton; the very name would have sounded strange to the people of the quiet village. Mrs. Deane had hardly allowed little Zachary to leave her sight, in her zealous care for him at home. She had walked, talked, and played with him,—shielded him from every evil, she thought,—provided for all his child pleasures and shared all his child sorrows. It was hard to think of him as anything more than a baby, even now. But Mr. Deane had declared that it was time for him to be a boy, and Zachary himself had begged hard to be allowed to go to school with Rob Smith. So the mother had reluctantly consented, and this first Monday in September she stood watching him on his way to school. Somebody else was to help take care of her boy now. Would she understand his high spirit and sensitive nature? Would she appreciate all his quaint sayings and winsome ways? Would she know how different he was from all other children? Would the new experience be hard for the little lad? Would he become rough and rude through contact with children who had never known wise care? Would he learn something of evil with the good? Mrs. Deane had asked herself these questions many times before. Little Zachary turned the corner in the street as she revolved them again and again in her mind,—turned and did not look back to wave a good by to his mother. She went back to her work with a heavy heart, though she condemned herself for her misgivings.

Zachary is talking earnestly with Rob, who explains to him the mysteries of school life. "You can't talk out loud, and you can't whisper, even; and if you turn around, she gives you a check. And you have to make your slate full of it's every day. You will be in the baby class."

"I'm not a baby," Zachary replies, still calling you all babies when you first come, remembering his own experience. "Mum says any way. This teacher is a new teacher," said. I wonder if she will give many checks.

Zachary's steps are slower than at first. If he were not ashamed, he would run home. What are checks, he wonders,—straps like those he has seen on horses' necks? And must he tell the teacher that he was not a baby?

They reached the schoolroom door. It stands wide open, that the little feet may enter. Groups of children are playing about. Across the road is a field of golden-rod, and beyond are pines. It is pleasant there, Zachary thinks. And what are those children playing? There are others busy within doors, and some are singing. That pleasant lady with them,—is she their sister?

Rob is leading him into the room. The lady is saying something to them both. "Good morning, boys! I am glad to see you. I was just wishing for two little men to get me some goldenrod for this vase." The "little men" responded with a will. They come back with the golden blossoms, as the children are passing to their seats. There is time for a gentle "Thank you," and for finding seats where the new friends may be near each other. Proud little Zachary is glad in his consciousness of the service he has already rendered his teacher, and he sits up with dignity in his seat.

The gentle voice leads the children so quietly that they are not conscious of the following. There is a child's hymn for the young voices to repeat, line by line. And then comes a morning song, in which Zachary essays to join. He listens eagerly for every word that falls from Miss Soule's lips. Now she is telling something that she saw on the way to school. Rob had seen something, too,—a crow that was black and that flew near a corn-field. And then the boy they called George tells something, and Kate follows. Before he knows it, Zachary is talking, too, about the goldenrod he had brought; where he found it; how stiff the stem was, and how easily he broke it; how beautiful it was, and how bright, and why they must be sure to keep water in the vase. They are all eager to tell where it could be found. They forget to be shy.

Now a quiet moment again; then the pretty red curtain is slipped from its place behind the desk, disclosing work for the little ones to copy. Miss Soule shows them just what she wants, so it seems very easy for them to do it. And they all play they are soldiers, who can do just as they are told. The slates are moved so quietly that Miss Soule can hardly hear them. Zachary likes that game.

He is not afraid when Miss Soule calls all the children who have never attended school before to come around her table. He wants to go, to see what can be hidden in the little covered boxes she has placed there. Miss Soule sits by the table, and the children gather about her. Ah, there is a little doll in that box, a green frog in this. The frog is not alive, Zachary discovers. There are so many questions to be asked, and Miss Soule answers them so patiently that the time seems very short. Miss Soule sends the little ones to their seats, promising a recess.

That means, Zachary tells his mother afterward, that "you walk out very quietly and get your hat, and have a good time out of doors for five minutes."

There is singing for them all afterwards, and marching when they are soldiers again. Then Miss Soule speaks so kindly of the work on the slates that Zachary wishes he could try, too. Miss Soule promises a slate for to-morrow, and gives him some bright circles of red, yellow, and blue, to place in pretty shapes. He makes a beautiful mat, he thinks, before time for him to march again. This time he is going home. His teacher is saying good by to the children at the door. She asks Zachary to be sure to come tomorrow. He will be sure, he promises.

Mrs. Deane has a warm welcome for the eager little lad who rushes into the room to find her. "Did you enjoy your school, dear? Tell me what you did," she says. "Oh, I helped Miss Soule, and we talked about the flowers, and the toys in the boxes, and she wishes me to bring my kitten some day. May I? And I *promised* to go to-morrow! And, mamma, she didn't call me a baby, and I didn't see any checks!"

"What have you done today?" I asked Miss Soule at night. "Just a little, to make a beginning. I have been finding out what my little people know, so I may know what I need to teach them. And we have been learning how to move together, and to be quietly busy. I shall make my divisions into classes to-morrow. Some of the children are much more mature than others, and can work faster. And now I must plan to-morrow's work, so that they may be rightly busy all day."

I saw her plan afterwards,—a neatly arranged diagram that showed the work for all the classes, at their desks and in their recitation. There were two notes at the bottom of the page; "Remember to teach the children how to come and go, and to use their pencils." "*Mem.*: Find extra work for little Zachary, and learn about his home."

"FATED TO BE FREE."

BY ANNIE BRONSON KING.

THE tower in which the princess dwelt looked as if it were made of pink and white foam, but the material was very substantial, and would have resisted an attack right bravely. The tower had no window through which the young lady might look out, and this seemed strange, since it was her own tender, loving mother who built it; perhaps the mother thought her young daughter might be better employed than in gazing out and wishing she could go where she liked. Certain it is that the princess was born in the tower, shaded by a grand old oak, and that she could never have grown up among other surroundings.

I once had the honor of visiting her younger sister, who was indeed a baby at the time; she lay in a pink cradle,

a little soft, white thing under the downiest of blankets. The princess had, I suspect, passed through just such a sleepy stage herself; but when I first met her she was a slender, handsome creature, clad all in brown, with beautiful dark eyes that seemed to see a thousand ways at once. There was a great deal of gauze about her dress, which sparkled here and there as with a diamond, and fitted her beautifully. It was plaited in exquisite folds about her dainty waist. The name of the family to which she belonged was Cynips, and it was the law of the race



Review

that when its young ladies grew up they must come out of their towers.

And how do you suppose this came about? Did some beautiful prince, mounted on a fleet steed, demand the freedom of his lady love, or some freebooter thunder at the palace-gate for her release? No, no; the singular race to which the princess belonged did not do things after such a satisfactory fashion; there was but one way in which the young lady might come out of her prison, and I dread to mention it in connection with such a lovely young creature, lest she forfeit your interest. It was the unalterable law of the Cynips family that each princess must eat her way out!

Perhaps you will not think this such a hard fate if her tower tasted as nice as it looked; for its resemblance to pink-and-white ice cream was very marked, but the tower walls did not taste at all like ice-cream; instead they were

as bitter, let us say, as gall. It was on a November morning that I saw the princess stand at the little round window she had made by her nibbling. I fancy, however, she was very wide awake indeed, and that her wiser sisters kept themselves housed a while longer. The next time I saw her she had set up housekeeping, and one day was seen watching a tiny cradle of her own; it was very small and pink and white, and I cannot help believing that when her daughter is grown up she will find herself immured in a tiny tower attached to an oak leaf, for such has been the custom of all the young ladies belonging to the Gall-fly family from time immemorial.

TALKS WITH YOUNG TEACHERS.

I.—DISCOURAGEMENTS.

BY W. C. JAQUITH.

PERHAPS this seems like a strange word with which to greet young teachers as they cross the threshold of their profession. However it may seem, be sure that it is because you must pass through the valley of humiliation, probably very early in your career, that this subject has been chosen for our first talk. The hardest thing about it is that we are all too proud to say much about such trials till after they are over. If you can clearly understand that discouraging things during one's first years of teaching have been the experience of every one of us, it will perhaps be the beginning of comfort. For out of that fact grows another: the hard things do not necessarily last, do not mean defeat or failure; they mean nothing more or less than inexperience. Take courage from the thought that time and a stout heart are pretty sure to cure them.

The order wretched to-day? Yes, very naturally. Remember that the living, breathing, human being is the most delicate piece of mechanism in the world, and do not hope to acquire instantaneous control of it. Do you know that your neighbor next door, whose self-poise you so envy, has been teaching nine years? She has learned all the ins and outs of her work. She is sure of herself, and her scholars know it. Try to-morrow to show something of her calm cheerfulness, even if you do not feel it. Make it your aim never to seem disturbed, whatever happens. No matter if a dignitary does happen to visit your room at the most inopportune moment that could be devised; if you can welcome him with smiling face, the battle is half won. Gradually the children will gain confidence in you, and will obey you as a matter of course. It is a strange thing that so many teachers begin with too much severity, too little love. Perhaps some of the little things that annoy you so much are not real disorder. Remember the day has passed when it is a sin for a child to turn round or smile in school; don't go out of your way to find offense.

You are doing miserably narrow work in your subjects? Be devoutly thankful that you can keep your head above water in them, at the beginning. It is no disgrace to say you don't know, or to correct an error you have made, or to postpone an answer to a question suddenly sprung upon you. If you do not act as if it were a defeat, it is not one. Older and wiser people are not ashamed to confess ignorance. A young teacher of botany once referred to Dr. Gray a question which she had felt annoyed at not being able to answer. He answered simply, "I don't know; I wish I did." Now and then you will find a scholar who has a mania for correcting the teacher, and trying to puzzle her. If nothing else will work a cure, he must have a public lesson, but try a private talk first. A public reproof may hurt like the lash, and stir up lasting strife, while a kind word in private may turn a rude boy into a gentleman. Make it your unvarying rule to be considerate of the pupils' feelings.

Did the superintendent show lack of courtesy in his remarks upon your work? Worst of all, did he criticize you before your pupils? That is very hard. It is one of the unexplained mysteries, this open criticism of a teacher before her school, that men, gentlemen in other respects, are sometimes guilty of. There have been cases where the remonstrance of the teacher has checked the evil, but as long as the world stands there will be inconsiderate people, and their victims must suffer. Try early to gain that spirit which takes just, kind criticism with true thankfulness, and rises with elasticity even from that which is harsh. The sensitive plant is out of place at the teacher's desk. You will find plenty of things to crush you all along the way, if you choose to be crushed: try rather to gain inspiration, even from your failures.

Your surroundings are not pleasant? That is an evil, surely. If you are in a thoroughly bad boarding-place, — one that for any reason seriously interferes with your happiness, — leave it at the earliest possible moment. It is better to offend one family than to sacrifice your peace of mind on the altar of compliance. Your home concerns you more nearly than it can any one else, and you have a perfect right to choose the best one you can find.

Keep well. You never can less afford to ignore the claims of the body than while your work is new. The cheerfulness which you need as one of your chief weapons, has a close relation to bodily health. Be content to have little social life at the outset, and thus secure time for the preparation of lessons without infringing upon sleep or exercise. From the beginning, form the habit of not worrying over school matters. You will not serve the cause by fighting the day's battles a second time upon your pillow; you will distinctly injure it instead. One secret of the power of great men is their ability to concentrate the full strength of the mind upon the task of the moment, and to drop a subject when they please. The mental power wasted in regret and worry would supply the world with Edisons for generations to come.

Now, a closing word to those bright spirits who think they do not need encouragement, who find the skies unclouded, and are full of plans for improvement. The enemy may be lying in wait for you, though you know it not. The world does not always take the reforms of novices with thankfulness, and your too great confidence may bring your downfall. You remember the man in *Pilgrim's Progress*, called Talkative; if memory serves me, he did not reach the golden gate. Take warning by his example. Do quietly and skillfully what you see your way clear to do, but be content to go slowly, and above all, do not herald your projects too loudly. Let your deeds, whether past, present, or future, speak for themselves.

OBSERVE THE CHILDREN.—(I.)

BY ALBERT E. WINSHIP.

FOR your own sake, for the good of the child, as a contribution to the profession, observe carefully the children under your charge and make record of your judgments. The profession needs nothing to-day more than reliable information concerning pupils; teachers need nothing more than they need skill in the study of children; pupils need to be known more than they need book-facts and processes. The teacher works not through books, but through the child's physical, mental, and moral nature. The lawyer has at his command a digest of every decision ever rendered; the physicians are aiming to secure complete returns of all peculiar cases that they may have as complete a list of precedents, but the teacher is absolutely powerless. There is nothing to which he can refer. He can purchase a cart-load of "methods" or of vague and visionary speculations about ideal imaginary minds. He can find a few books recording observations of children under three years of age, but almost nothing about the mental activity of school children.

We propose through the readers of the *JOURNAL* and *AMERICAN TEACHER* to start this work, hoping that it may spread widely. Will you aid in this matter? True, it will take some time and some effort, but will you not do it, not for our sake, nor wholly for your own, but for the sake of the profession that should be dear to our hearts?

TEST PERCEPTION.—Place ten times as many peas as you have pupils, on damp cotton or moss in a dark, or partially dark, warm place, and do the same with beans. The second day give one of each to each pupil, and let him examine it as fully as he pleases, taking it apart if he wishes. He is to have no assistance, but is to make notes of all that he discovers in each, — these notes to be collected and the remnants thrown away. The third day each is to be given another pea and bean, and is to examine and make notes as before. This will continue for ten days. In that time you can readily discover how

fully, carefully, discriminatingly, the pupils have perceived the germinating, developing seed.

You will know more of the mental weakness and strength of the children at the end of the ten days than you would know in ten weeks of routine work. Will you try it, and send us the average age of the pupils, the entire number, the percentage of very keen, fairly keen, slow, and very slow of perception; also samples of the best and of the poorest work?

Other tests will be given from time to time.

BOOK-A-MONTH COURSE.

WE recommend for October reading ROUSSEAU'S **EMILE**, Eleanor Worthington's translation, published by D. C. Heath & Co., Boston, (price 60 cents), for several reasons. It is delightful reading, is in the highest sense inspiring, stimulates thought, and makes one proud to be a teacher. It contains but 157 pages or *three a day*. The expense is so light, the time required for reading so little that it would seem as though every teacher could do this much. It is highly profitable. "It reflects the features of *educational humanity*." "At each step we are met with sound reason."

QUESTIONS AND SUGGESTIONS.—1. Write a brief paragraph on the first paragraph on page 6, *after reading the entire book*.

2. What three "educations" are there? (pp. 11-15.)
3. What are Rousseau's "Maxims"? (30-35.)
4. Select the ten most important sentences on pages 40 and 41.
5. Write a paragraph upon lines 14 and 15, page 45.
6. Do you accept the philosophy of the third sentence from the close of page 52—"I would," etc.?
7. Which is the strongest sentence on pages 54-6?
8. Put in a single sentence of not more than twelve words the great thought, pages 57-62.
9. Write from 200 to 500 words upon Falsehood.
10. What is the relation of judgment to memory?
11. What do you learn regarding the study of words?
12. Does the paragraph "A tutor usually," etc., page 119, apply to teachers whom you know? to yourself?

The JOURNAL OF EDUCATION of October 3 will contain a carefully prepared list of fifty books, with notes and comments by Mr. Winship. These are not in the strict sense teachers' books, but are upon a variety of topics with which teachers should be familiar. They are prepared by Mr. Winship in response to many requests for something of the kind. The number will be sent to any one sending us a two-cent stamp to cover the trouble and expense of mailing. Address New England Publishing Co., 3 Somerset St., Boston.



FIRST STEPS IN LANGUAGE DEVELOPMENT.*

BY HARRIET A. LUDDINGTON,
Principal of Training School, Pawtucket, R. I.; Author of "Picture Problems."

II.—What the Teacher has to do in Developing Thought and Expression.

EVERY child who has not been subjected to unwholesome restraint, is dominated by an intense desire to communicate his thoughts to others. This desire forces him to find some means of expression. Naturally, he adopts the means used by those about him, namely, speech or oral language. By a process of which he is entirely unconscious, he learns just the expressions he needs to enable him to give his thoughts to others. A young child's language is, then, simply the outgrowth of his *own necessities* in the way of *thought-expression*. His limitations in speech are those arising from his narrow experience, and consequently limited range of thought. Give him a wider experience, thereby broadening his range of thought, and he immediately feels the need of language to express his new ideas. Since he learned to talk by imitating the speech of others, a child's mistakes in language are due to his surroundings. Place him where he hears correct language only, and insensibly his mistakes disappear. Two important lines of work, therefore, present themselves to the teacher. The first and most vital is that of creating a necessity for thought-expression,—presenting such conditions of thought that the child's mind will demand the necessary language. This language will, of course, be supplied by the teacher whenever the child shows that he feels the need of new expressions. A second, and hardly less difficult task, is that of providing such influences, and supplying such motives for effort, that the errors of speech so unconsciously acquired, will gradually be corrected.

The point should be again emphasized that these lines of work are *not to be taken up in a special language lessons*, but are the sum and substance of the work of the primary teacher in *every* lesson which she gives; first, training to think, and to think in such a way that adequate expression must result; second, making the corrections rendered necessary by the existence of previously formed habits of incorrect speech.

Before the teacher can begin upon the work suggested she must know something of the children with whom she has to deal. She must discover what power of thought they already have, *how* they think, and what their mode

of expression are. The only possible way to do this is by conversation.

In "Quincy Methods," Miss Patridge, referring to this earliest work of the teacher, says: "That she may know the value of ideas, previously gained, she is continually giving them test lessons, ranging from three to ten minutes in length, upon any and every important subject with which they are already acquainted. That she may furnish material for thought,—that is, lead them to see facts in new relations,—and also in order to train the senses (that they may discover facts for themselves), she has a great number of lessons upon objects of all sorts; also upon limitations, such as color, form, number, dimension, direction, etc."

Very often little science lessons, like those referred to in the preceding article, or conversations upon observations of natural phenomena,—such as the aspect of the clouds, the appearance of the sun or moon, the state of the weather,—form the best possible exercise with which to begin this testing of the mental state of the children.

It is hardly necessary to say that the little beginners should be entirely unconscious of the fact that any testing is in progress, or indeed that they are the subjects of particular attention in any way. The conversation should be simple, natural, enjoyable experiences, as delightful as the every-day life outside of the schoolroom.

LESSONS IN ZOOLOGY.

BY OLARABEL GILMAN, JAMAICA PLAIN, MASS.

The Sponge.—(II.)

For this lesson every kind of sponge that the teacher can secure will be useful.

Review of Lesson I.: The sponge is a mass of elastic fibres. The edges of the fibres stand out on every side but one, which is smooth and dark. The sponge is full of tubes that open on the outside. There are four sets of tubes: large tubes, small tubes that lead from the surface to the large ones, cross tubes that connect these small tubes with one another, and microscopic tubes too small to be traced out. Our sponges come from the Caribbean Sea or the Florida coast, and were taken from the rocks with a curved fork or a dredge. Mediterranean sponges are brought up by divers. When alive they were covered with a dark-colored flesh, but the flesh has been removed, and only the fibres are left.

Outline of New Work:

What was the use of the fibres? Not only to support the flesh, but also to protect the animal. They are made of a horny substance, and so tough that fishes very seldom try to eat a sponge. The hard parts of a body, supporting and protecting softer ones, are the *skeleton*. We have only the skeleton of our sponges. Which side was fixed to the rock? We are sure it was the smooth, dark side, because it appears to have been cut, and also because some of the sponges have bits of rock caught in the fibres on this side.

Where does the sponge get its food? From the water it takes in through the tubes. It takes in water through the small tubes that we see, and the tiny ones that we

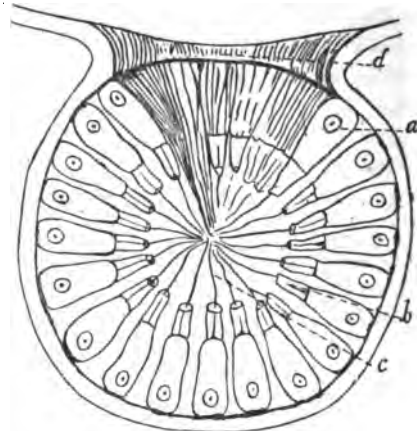


FIG. 2.

cannot trace carry it all over the sponge. When the sponge has taken from the water the very smallest plants and animals, which are its food, and has given carbonic acid in exchange for oxygen, then the water passes out through the large tubes. But as only the most minute plants and animals can pass through the microscopic tubes without danger of choking them up, a thin, porous skin like a delicate sieve covers the whole sponge except the two or three large openings. But why does no water enter at these? Because there is always a current flowing out from them.

In little sacs (Fig. 4*) all over the sponge are cells (a) bearing each a microscopic whip (c), always lashing the water and producing the currents that carry the foul water out through the large tubes as fresh streams come in through the small ones. In these cells, too, the food is digested. Though the outward current keeps the large tubes open, yet if a living sponge is disturbed, it will contract so forcibly as to close even these openings.

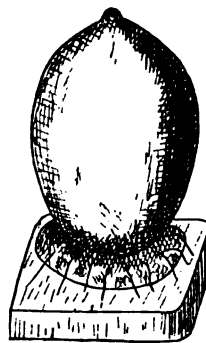


FIG. 3.

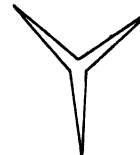


FIG. 4.

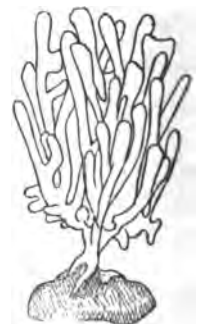


FIG. 5.

Baby sponges can swim about in the water, but they soon form a sucker at one end, by which they fix themselves (Fig. 5) to rocks, shells, or even the sea fans and other branching corals, and after that they never leave their home unless something tears them off.

Many sponges grow on our New England coast, but

* Figs. 2, 3, and 4 are highly magnified, while Fig. 5 is much reduced from the natural size.

are too brittle to be of any use. A little white sponge that grows among shells in the mud just below low-water mark, consists of small branching tubes about an inch long. It has no fibres in its skeleton, but everywhere in its flesh are little three armed bits of lime called spicules (Fig. 6).

The common finger-sponge (Fig. 7) grows in large masses on rocks and piles. The dark red and soft yellow masses found in salt water, and the white flattened cakes often cast up on the shore and dried hard in the sun, are all sponges, the last named called by the sailors "seamen's biscuit."

In a quantity of oyster shells there will usually be one or two, at least, that have been attacked by the boring sponge, which tunnels them through and through, and finally destroys them by dissolving out all their lime.

A SHORT LESSON ON EUROPE.

BY MEHITABAL.

WHEN we are ready to take up the geography of Europe, I carefully locate it upon the globe, showing its relative position to the other grand divisions, and also its climate. I draw an outline upon the board, showing its natural features, — peninsulas, capes, seas, bays, islands, rivers, lakes, mountains, etc. I try to have them realize that this is a picture of something very much larger than here represented, and to have them understand that by natural physical features, we mean the country as made by God, its mountains, rivers, plains, etc.

I take a smooth board, upon which I have outlined Europe, marking all water with blue chalk, showing mountains by having dropped fine sand upon mucilage, building the Alps higher than any other range, and Mount Blanc higher than any other part of the Alps. In this way I easily and plainly show the Alpine System and the four rivers rising directly in the Alps mountains. We carefully locate this highest peak, finding it in the highest range, but say very little about names. In noticing the rivers, flowing from different sides of these mountains, we speak of the melting snow, and say a few words about the glaciers of the Alps.

We now speak of the tundras in Northern Russia, with their scanty vegetation of moss and lichens, and of the heavy forest to the south of them, which supplies Western Europe with much of its timber. It is very easy from this map to show the five great peninsulas and the islands near the coast, the comparative height of mountains, the source and direction of rivers, and the chief water shed. It is easy for them to see that western Europe is much more elevated than eastern, that the coast is irregular, and must, therefore, afford many good harbors. I ask them a little about harbors, about the natural resources and uses of rivers and mountains, — just enough to set them to thinking. When I feel that

they realize that this map is a picture only of a great country, I mark the boundaries, showing its political divisions, their relative size and position to each other, speaking of difference in government, degrees of civilization, density of population, occupations of the people, exports, imports, commerce, etc. I make plain to them that the boundary lines shown upon the map are only boundaries between the possessions of different countries, just as a line fence separates one man's farm from another; that these lines change position just as the land owned by a nation increases or diminishes in quantity. We cannot be too careful to have them understand these things, so they can work intelligently. I thought once, "Of course they know all about such things. It is of no use to waste time upon such trifles." However, upon the suggestion of a friend, I said to my school, very seriously, "If a man stood just below or south of the northern boundary of Connecticut, where would his head be?" To my intense mortification several of my brightest boys and girls readily replied, "In Massachusetts." *I've stopped taking things for granted.* I want to know that they are working as intelligent boys and girls, and not as machines. And here, let me add, it is a mystery to me how any one can teach geography and not in spite of himself teach history with it. It is surprising what our children can understand and can do for themselves, if we open their eyes to see, if we open our own eyes to the beauty there is in true teaching.

THE USE OF OBJECTS IN THE STUDY OF DRAWING.

BY WALTER S. PERRY, PRATT INSTITUTE, BROOKLYN.

[The following article, published in the JOURNAL OF EDUCATION, is printed by request in the AMERICAN TEACHER. It is one of the clearest, cleanest presentations of the "why and wherefore" of object drawing that has ever been given in so brief space.]

YES, but the children are to draw simply a circle, and as all know the shape of a ball, why use the sphere for an exercise on circles and half-circles? A ball is round; but if we ask children to make a drawing of it, — to draw its front view, top view, etc., — will they realize fully its outline? They see its roundness toward them, and when asked what they are to draw, they point to the spot directly in front of them and feel that they must draw something for that, or draw a series of concentric circles from this spot to the greatest outline. On the other hand they must handle the object and be led to trace the outline, or part farthest out, with the finger, when looking from the front, from the side, from the top, and from below; and it is not the simplest matter to teach them to see correctly and to understand so common an object as a sphere; but when understood, the drawing

means something to the children. And certain it is that they can the more readily be led to understand it by moulding one in clay,—and it will be found that even this is no play-work,—trying to keep all the imaginary diameters of the same length.

A semi-circle, too, is often drawn as a half-circle simply, and means nothing more to the pupils, but let us hold a hemisphere before the class. From one point of view it is a circle, from another it is a semi-circle (Fig. 1), and it may be turned so that the views will be the same as in Fig. 2, or arranged in several other positions, the views

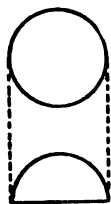


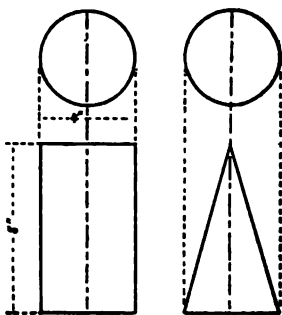
FIG. 1.



FIG. 2.

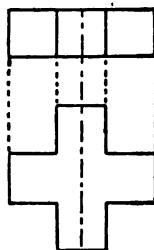
changing each time, so that the drawing of the circle or half-circle becomes a real thing to the pupils. And in deciding what to draw for the different geometric views in the various positions, the pupils are learning far more than can possibly be learned in making their first drawing from a copy. In the latter case there is education only of the eye and hand; in the former there is the education of the brain through the eye, and the knowledge is made known through the hand.

A circle, which of many forms has been taken as an illustrative form in this paper, and which may be almost meaningless in itself to the child, may, in connection with other views of objects besides the sphere, represent very much. Let the pupils study a cylinder, its various surfaces, outlines, edges, etc., from different points of view, but always at first a geometric view. A circle at one end of an oblong, slightly separated from it, represents the facts of outline of a cylinder, and in connection with a triangle, the facts of a cone. These drawings, and others given below as illustrations, properly figured and representing the facts of the objects, are sometimes called working drawings, because they can be easily understood and worked from in the construction of the object itself.



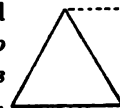
Of late much has been made of working drawings, and this has led to some criticism in regard to their study. A mistake may have been made in laying so much stress upon the words "working drawings;" but when we consider just what faculties have been awakened and developed in the child by this objective and subjective teaching, we shall find that far more has been gained than the mere knowledge of how to make and to read working-drawings. By this study of concrete form there has been developed in the pupil that which is of the highest educational value,—the power to think. Neither can the mem-

ory nor the imagination well act till the mind is possessed of facts.



to be true.

Correcting a drawing does not correct the error in the child's mind, and this fact should not be lost sight of. He must be sent back to the object. To correct the drawing is to begin at the wrong end. The child must be educated to see with his own eyes, and not through those of somebody else. In the child's mind must exist the image. If the image is wrong, the drawing will be wrong. True, at times the image may be right and the eye wrong, *but we see to the extent of that which is within us.* First get the



fact into the mind through the eye, and then get it out through the hand. Hence the great necessity of the study of objects in connection with drawing,—first their facts, and then their appearance, and lastly the principles of their ornamentation.

THE CHILDREN AND THE POETS.

[Arranged by Kate L. Brown.]

MARJORIE'S ALMANAC.*

THOMAS BAILEY ALDRICH.

Robins in the tree-tops,
Blossoms in the grass,
Green things a growing
Everywhere we pass;
Sudden little breezes,
Showers of silver dew,
Bent twig and black bough
Budding out anew;
Pine tree and willow tree,
Fringed elm and larch;
Don't you think that Maytime's
Pleasanter than March?

Apples, in the orchard,
Mellowing one by one;
Strawberries upturning
Red cheeks to the sun;
Roses, faint with sweetness,
Lilies fair of face;
Pleasant sounds and odors
Haunting every place;
Lengths of golden sunshine,

* Arrangements have been made with Messrs. Houghton, Mifflin & Co. for the use of this poem and portrait.

Moonlight bright as day.
Don't you think that Summer's
Pleasanter than May ?

Roger, in the corn patch,
Whistling negro songs;
Pussy by the fireside
Romping with the tongue;
Ochestants in the ashes
Bursting through the rind,
Red leaf and gold leaf
Rustling down the wind;
Mother doing peaches
All the afternoon;
Don't you think that Autumn's
Pleasanter than June ?

Little fairy snow-flakes
Dancing in the flue;
Old Father Santa Claus,
What is keeping you ?
Moonlight and firelight,
Shadows come and go;
Merry sound of sleigh-bells
Stealing o'er the snow;
Mother's knitting stockings,
(Pussy's got the ball ;)
Don't you think that Winter's
Pleasanter than all ?



J. B. Aldrich.

For the Children:

Mr. Aldrich was born in Portsmouth, N. H., and will celebrate his fifty-third birthday the 11th of this coming November. He is one of the first of America's poets, and perhaps her best living song writer. He has also written several novels and collections of short stories, and until quite recently was the editor of the *Atlantic Monthly*.

Children will remember Mr. Aldrich best by his ever delightful "Story of a Bad Boy," and to the end of the

chapter they will insist that "Tom Bailey" and the author were one. "The Little Musician," "My Neighbors," and "A Young Desperado," are short prose sketches that all children will enjoy.

Mr. Aldrich lives in Boston, winters, but his summer home is at Ponkapog, a rural neighborhood of Canton, Mass. It is an old-fashioned brown house with a large yard in front, comfortable and homelike, but not showy.

Mr. Aldrich is short, rather stout, with pleasant blue eyes and brown hair, now turning gray. He is very courteous and agreeable to every one.

For the Teacher :

This little poem was published in *Our Young Folks* originally, but has never, we believe, been included in any of Mr. Aldrich's collections of his works. It is a perfect little idyl of the seasons, and child-life amid the various changes of the year has never been better sung. It is a song in itself, and has been most happily set to harmony by Mme. Sainton Dolby.

Read the poem first to the children with all the skill of which you are master. Call their attention to the various signs, as "the robins," "blossoms in the grass," and let each be the subject of some little conversation. Lead them to see the sunshine pervading the whole poem, and how joy may be gained from very small things. Make them feel the movement of the poem,—its short staccato passages so descriptive of the sudden, thousand and one little "buddings and burstings and flutterings" of the new life of spring.

Let them learn it by repeating it with you, and let them sing it to Mme. Dolby's music. Let them copy it for a writing lesson. This poem is a good one for illustration. The copies may be mounted on rough cartridge paper of pale blue, green, or primrose, and illustrated by the drawings, paintings, outline sewings of the different objects mentioned, made by the children. Let the cover be designed by the two or three cleverest artists among them.

HOW TO SKETCH NORTH AMERICA IN ONE MINUTE.

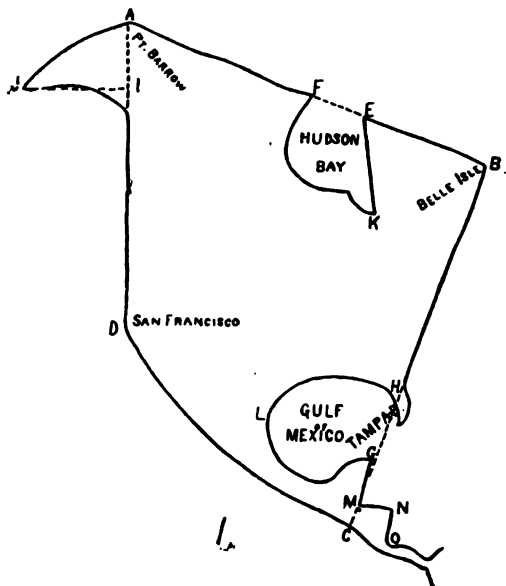
BY D. E. AUGSBURG, NEW YORK.

DRAW the right angle ABC, making AB equal to BC. From A draw a vertical line curving around to C. D is one half of AC. From E, one third of AB, draw a line to K, slanting slightly to the right. K is in a straight line with BD. F is one half of AB. H is one third of BC. G is one half of HC. The curved line HLG is like the capital letter G. From I, one fourth of AD, draw IJ about one third longer than IA. CM is one third of GC. GM, MN, and NO, are equal.

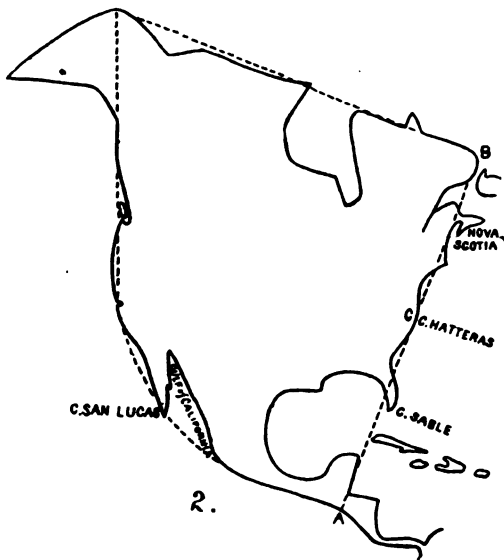
This will give a well-proportioned map of North America, and should be drawn in less than one minute.

Map II. is a little more complete. Cape Hatteras is

about one half of AB. Cape Cod, and Nova Scotia are each one third of BC. The Gulf of California is a little higher than the Gulf of Mexico. Cape San Lucas is a little lower than Cape Sable.*



Map III. is as complete as a sketch need be. This map is the same as maps I. and II., only carried further, showing the principal lakes and rivers, as well as the elevated



portions of the land. On the blackboard the elevated portions may be represented with the flat of the crayon, making the highest elevations whitest.

In modeling North America in clay, putty, or sand, exactly the same plan may be followed.

No more pleasant and instructive lessons can be given to a class after they are able to sketch North America easily, than to give them examples like the following:

*Puget Sound is as far north as Nova Scotia.

(1) Sketch North America, and place the principal rivers and lakes.

(2) Place the principal mountain ranges and peaks.

(3) Place the principal gulfs, bays, and sounds.

(4) Place the principal capes and peninsulars.

(5) Place the principal cities.

(6) Place the political divisions.



(7) Place the agricultural products.

(8) Place the great mining industries.

BIRD ENEMIES.

[For Supplementary Work.]

BY K. L. B.

I.—The Jay.

[Adapted from John Burrough's "Birds and Bees."]

DO you know what "an enemy" is? It is some one who wants to hurt you. But who would hurt the dear little birds, I hear you say.

We think of the birds as always happy, but this is not so. They have as much to try them as we do, and their lives are often full of care and pain. And the birds always know their enemies. See how they will scold and chase the cat, but let the dog alone!

The jay is a great foe of the other birds. He comes sneaking around among the trees in May and June, to steal eggs. But the birds soon find him out. Then how they scold and chase him away!

"Thief! thief!" they cry at top of their voices. And the jay calls back to them.

Perhaps he says, "I'm as good as *you*, any day. Thief *yourself*!"

I suppose the birds feel when they see the jay coming, as we would if robbers were about. But little the jay cares for the scorn of the other birds. He is a jolly, care-free fellow, and does not mind his bad reputation.



DISTRIBUTION OF SEEDS.—(II.)

BY FANNY D. BERGEN.

A NOTHER large group of seeds and fruits will include all such as are armed with prickles, needles, or hooks, by means of which they become entangled in the fleece or hair of animals, and thus travel far or near, as it may happen. Young children will eagerly listen to stories about silent but persevering little travelers, who, in this way, often steal a passage even across the sea; and when they see that the burs or "stick-tights" of any kind that so stubbornly hold on to their stockings or other clothing, in almost every autumn ramble in woods or pastures, will be scattered where their chance of life is far greater than if they had all dropped upon one crowded spot of earth, about the plant that bore them, they will have gained something worth thinking about as they dislodge the clinging seeds or fruits. Older pupils may be led to make individual studies of the provisions for attaching themselves which the different burs possess, from the microscopic hooks on the hairs of the tick-trefoil (*Desmodium*) to the barbed prickles of the beggar-ticks (*Cynoglossum*), the tiny lance-heads of the bur-marigold (*Bidens*), the clinging hooks of the burdock, and the stouter ones of the cockle-bur, to the savage spines of the sand-bur, or bur-grass (*Cenchrus*), ending the series with the goat-horny hooks of the *Martynia*, which serve to scatter its seed-vessels far and wide, as they fasten to the tails of the half-wild cattle of the South American pampas.

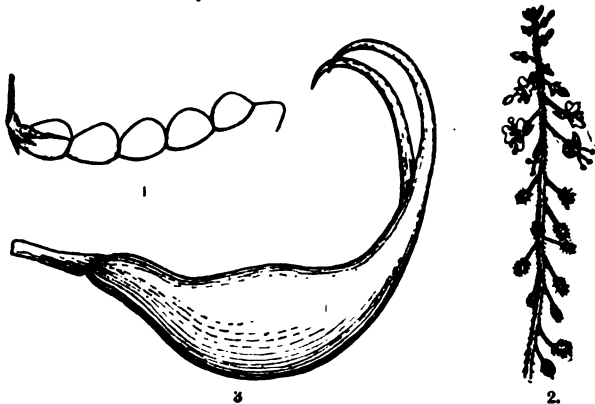


FIG. 1.

FIG. 1.—1. Fruit of tick-trefoil, *Desmodium*. 2. Flowers and fruits of enchanter's nightshade, *Atropa*. 3. Fruit of *Martynia*.

Another less frequently occurring but very ingenious device for sending ripened seeds at least a small distance from the parent plant, is that of the mechanisms for shooting forth the seeds by the violent bursting of the pod or

the splitting away of the pistils from a central column. The wild balsam (*Impatiens*) illustrates the former plan, and the crane-bill and the herb-robert illustrate the latter.

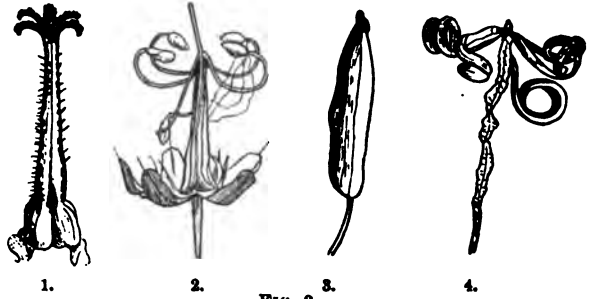


FIG. 2.

FIG. 2.—*Geranium* pistil, magnified. 2. *Geranium* fruit, magnified. 3. *Impatiens*, ripe pistil. 4. *Impatiens*, fruit, after opening.

Whether the attention of the class may profitably be directed to the consideration of that very large class of cases in which seeds are distributed by being swallowed by birds or quadrupeds, and afterward voided, undigested, must depend on the age and temper of the class and the tact of the instructor. There is certainly no more important mode of distribution than this, and indeed it is to adaptation for this means of transportation that we owe, for example, every one of our edible fruits, from the strawberry to the peach.

It may not be easy to give to pupils in general any adequate idea of the extent to which seeds are carried by water. Those, however, who live near large rivers, lakes, or ponds, must have noticed the windrows of drift-material heaped at times along the shores, and a little examination of the contents of these will usually disclose the presence of seeds, or of germinating plantlets. Even the most unimaginative child can follow a cocoanut, enclosed in its thick, buoyant husk, over hundreds or thousands of miles of ocean-voyaging, until it lands at last, perhaps, on some hitherto treeless coral island, there to grow into a graceful cocoa-palm. If the teacher is not already somewhat familiar with the writings of Darwin, of Wallace, and of Grant Allen, she will find much in them that would aid in the kind of lessons here suggested.*

* See Wallace's *Island Life* and his *Darwinism*, Darwin's *Origin of Species*, and Allen's *Evolutionist at Large*.

NOVEMBER SENTENCES.

[For Blackboard Work.]

BY GEORGIA A. HODSKINS, SPRINGFIELD, MASS.

The days are growing shorter.

We ate our supper by lamplight.

Fanny saw a flock of little birds in the pear tree.

They were singing chick-a-dee-dee.

The water in the brook is deeper than in the summer.

See how fast it runs over the stones.

Dora saw a flock of crows.

She brought me a bunch of immortelles.

They will be pretty all winter.

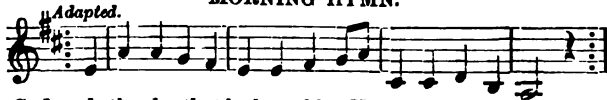
Lou found five violets in a sunny spot by the brook.
 I wonder if they thought it was spring.
 We gathered some bleached ferns to press.
 The hazel trees are still in blossom.
 All the other flowers are gone.
 The scarlet oaks are beautiful now.
 See how bright they look in the sunshine.
 People call these warm, bright days Indian summer.
 There was a hard frost last night.
 This morning everything looks brown and bare.
 We have many cold, rainy days now.
 The leaves are falling from the trees.
 Elms and maples are quite bare.
 The oak leaves will hang longest on the trees.
 The farmers are getting in their turnips and pumpkins.
 John's papa is threshing rye.
 The ground is frozen.
 Mr. Robin can find no more worms to eat.
 He must fly to the swamp and look for cedar berries.
 The snow-birds are here again.
 There was ice on the edge of the pond this morning.
 Grandpa saw a woodpecker in his orchard.
 It was in the trunk of an apple-tree.
 It made little round holes in the bark.
 Grandpa likes the woodpeckers because they eat worms.
 John has been helping his father cut wood.
 Hear the blue-jays screaming.
 They are sorry the nuts are gone.
 I saw a partridge eating the buds on an apple-tree.
 This morning the air was full of snowflakes.
 Some were very pretty, but we could not find two alike.
 Dick says his turkey is so fat he can hardly say "gobble."
 He is getting ready for Thanksgiving.
 Mamma and grandma are getting ready, too.
 They are making pies and cakes.

SCHOOL SONGS.

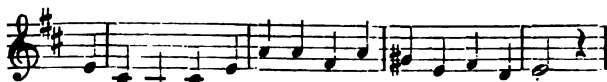
BY M. E. C.

TEACHERS are always glad of fresh songs for the schoolroom, and the following deserve appreciative recognition:

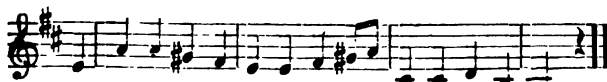
MORNING HYMN.



God made the sky that looks so blue, He made the grass so green,
 He made the flowers that smell so sweet, In pretty colors seen;



He made the sun that shines so bright, And gladdens all I see.



It comes to give us heat and light; How thankful we should be!

"God made the pretty bird to fly;
 How sweetly has she sung!
 And though she flies so very high,
 She won't forget her young.
 God made the cow to give us milk,
 The horse for us to use;
 We'll treat them kindly for His sake,
 Nor dare his gifts abuse.

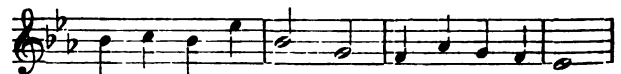
"God made the water for our drink,
 He made the fish to swim,
 He made the trees to bear nice fruit,
 Oh! how we should love him!
 What can we do for this kind Friend,
 Who gives us all these joys?
 We'll try all naughty ways to mend,
 Be better girls and boys."

The above hymn, unlike so many taught to children, appeals in the simplest phrasing to the child's knowledge of certain phases of life, and stirs the heart through this knowledge to the love of Him who guards even the familiar and commonplace of every-day life. So many child-hymns deal so entirely with what is indefinite and intangible to the child that he gains no perception of God's care for all and everything; and of what use is the child-hymn unless it arouse a sense of reverence:

TINY LITTLE SNOWFLAKES.



Tin - y lit - tle snowflakes, In the air so high,



Are you lit - tle an - gels, Floating in the sky?



Robed so white and spot - less, Fly - ing like a dove,



Tin - y lit - tle snow flakes, In the air a - bove.

"Whirling on the sidewalk,	Loading all the house-tops
Dancing in the street,	Powd'ring all the trees,
Melting in the faces	Cussing little snowflakes,
Of ev'ry one you meet.	Floating on the breeze."

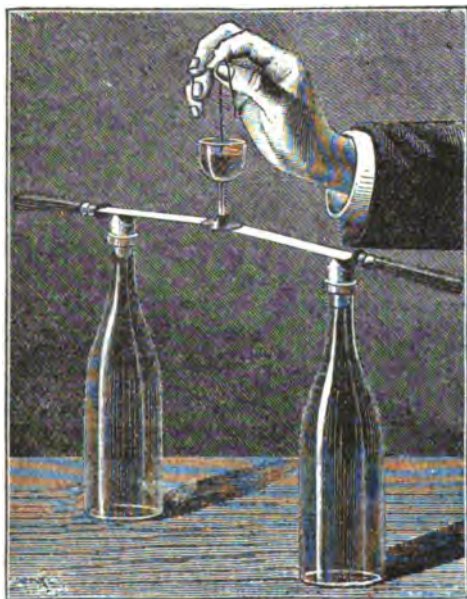
The above snow-song seeming to appeal to the poetic side of the child's nature, brings in the singing a sense of "nature's mystery" in accomplishing with indescribable silence the wonderful snow magic of winter, and invariably the little eyes will wander windowward; and if perchance a storm be whitening the fields, the music is very apt to sink into a soft-hush melody, creating a delightful feeling of rest and peace among the little people.

We have had, I think, and still have, too much written work under the head of recitation and examination. A written exercise is in no true sense a recitation; all the grand elements and results of a well conducted recitation are wanting.—George Howland.

SIMPLE SCIENTIFIC EXPERIMENTS.

A curious experiment, illustrating a law of hydrostatic pressure, can be performed by cutting an edge upon the ends of two corks, placing them in the necks of bottles, and balancing two knives upon them in such a way that they will just support a glass of water. After a few trials this can easily be accomplished. Then attach a coin, or or any small heavy object, to a string, and holding it in the hand, carefully lower it into the liquid. Although there is apparently no weight added to the glass of water, yet it will immediately sink down, the supporting knives turning upon the corks like the beam of a scale. Lift the coin from the water, and the glass will rise again, returning to its former position. and by the proper manipulation of the coin, the glass can be made to dance up and down at will.

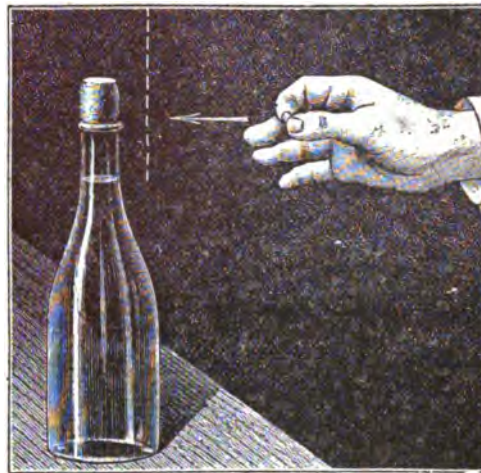
The explanation of this simple experiment is not as easy as it might seem. It is really an illustration of the upward pressure of liquids. When the coin is dipped into the water it displaces an amount equal to its own bulk, and is buoyed up by a force equal to the weight of that bulk of water. This upward pressure reacting against the bottom of the glass, forces it downward, the same as



if an additional amount of water, equal in bulk to the coin, had been poured into the glass, thus increasing its weight. We can readily understand that if a piece of wood, or any substance that floats on water, were placed in the glass, the weight of the whole would be increased, and a precisely similar effect is produced when an object that would otherwise sink in the water, is suspended in it although it does not touch the glass containing it.

Any sufficiently delicate balance, or pair of scales may be substituted for the arrangement of knives and bottles, figured above, if desired.

Take a bottle and place a cork over the mouth. The cork must be sufficiently large to rest lightly upon it, without falling into the neck. Snap the neck of the bottle sharply with the thumb and finger, and the cork will fall from the bottle towards the hand giving the blow, and



not away from it as might be expected. This effect is due to the principle of *inertia*, the quick blow, forcing, as it were, the bottle away from the cork, before the motion can be transmitted to the cork itself.

Few persons will be able to perform this experiment satisfactorily the first time, as the instinctive fear of breaking the bottle or injuring the fingers, prevents one from giving a sufficiently powerful blow, in spite of all efforts to the contrary.—*Popular Science News*.

COLOR TEACHING IN SCHOOL.

BY A. E. WINSHIP.

WE have had the privilege within a few days of studying the new color-teaching plan of Milton Bradley of Springfield. Instead of standing by the old-time theory of three primary colors, he takes as his primaries the six colors of the spectrum. He analyzes a ray of light, and, singling out each color, experiments with paints until he secures the nearest available spectrum, red, orange, yellow, green, blue, and violet. He has secured papers with permanent colors, very like unto the spectrum ideal. With these he turns to the Maxwell discs, hitherto practically unapplied in this country, and by means of the wheel produces every hue, tint, shade, and tone that is of any practical or artistic value. By a simple device a very rapid and uniform motion is given to a wheel. Upon this is a white card circle, half an inch larger than the color cards, and graded into one hundred equal parts, so that the per cent. of a color may be known at a glance. There are six color cards,—spectrum colors,—ten inches in diameter, with a center circle cut out that it may be placed upon the shaft, and a slit from the center to the circum-

ference to admit of two cards being slid into each other and over each other. (See Fig. 1.) Now, in Fig. 2 may be seen a blue and red card, both upon the shaft, and so slid into each other that there is upon the wheel seventy-five per cent. blue and twenty-five per cent. red. In Fig. 3 there are three cards upon the shaft and so slid into

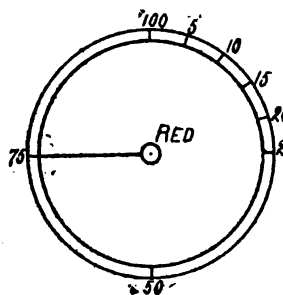


Fig. 1.

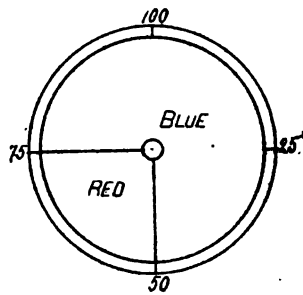


Fig. 2.

each other that there is thirty-three and one third per cent. of each,—red, blue, yellow.

In this way there may be placed upon the wheel any colors, in any desired proportions, and by placing the wheel in motion you will get the exact hue, shade, tint, or tone desired. It should be said that there is a black card to be used to produce shades, and a white card for tints. This reduces the making of hues, tints, shades, and tones to an exact science. Take any of the commercial tones

so fashionable in ribbons, and a school girl can experiment until she can tell what per cent. of each color there is.

From these experiments Mr. Bradley has produced a series of color cards after this fashion. He abandons the old-time nomenclature of secondaries and tertiaries, and uses instead a nomenclature

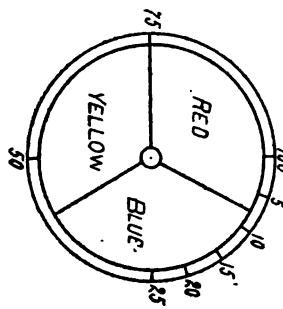


Fig. 3.

that explains itself. There are two hues of each blending of two colors, and they are named so as to indicate which color predominates. If there is more red than orange it is an orange-red, but if there is more of the orange, it is a red-orange.

The colors are :

Red, orange, yellow, green, blue, violet.

The hues are :

Orange-red and red-orange.

Yellow-orange and orange-yellow.

Green-yellow and yellow-green.

Blue-green and green-blue.

Violet-blue and blue-violet.

Red-violet and violet-red.

These lines will all have appropriate shades and tints ; as for instance: orange will have as tints, salmon and flesh color, and as shades, rich brown and burnt orange.

The colors will also be grouped in other ways, from the natural order that produces hues. Orange and green will

be grouped in three proportions, producing lemon or citron ; violet and green will be grouped in three proportions in olives ; violet and orange into russets.

The greatest success, in some respects, is in the production of a pure, neutral gray, by combining black and white, and modifying these by the introduction of a color.

The results are as follows :

Black, white, red, = warm gray.

Black, white, yellow, = delicate gray.

Black, white, orange, = buff-gray.

Black, white, green, = greenish-gray.

Black, white, blue, = slate-gray.

Black, white, violet, = lavender-gray.

After giving so much of the detail our readers will readily see what a wealth of resources these cards, scientifically colored, will provide. The wheel enables any one, man or boy, to solve these color problems by himself, and the arrangement is so simple that it is an easy matter to remember all that one learns from his experiments.

ARITHMETIC.

LANGUAGE work in numbers can only be used wisely in cases where numbers are well-known and practice alone is sought. There is no better way to teach rapid accurate addition of numbers without figures than in playing dominoes.

Give the brightest pupils extra work, advance work that they may not be taught to be lazy by pretending to study that which they already know. You can be unjust to bright pupils as well as to dull ones.

Have no pride in the use of objects. Use them when needed, never otherwise.

Have sufficient variety in the use of objects so that children will understand that the objects need not necessarily be always pegs, beans, marbles, or cubes, either white, black, red, or yellow. Use different colors and different forms frequently in presenting a given number. No primary school is equipped that does not have a box of toy money for frequent use.

Use cardboard circles, squares, right triangles, isosceles triangles, rectangles, etc., in early number work, giving the names of the figures without telling why they are so named. There is no more reason why you should define them at first than a ball or a marble.

Cardboard figures and cubes should be one inch or two inches on a side when practicable. They should be early spoken of as inch squares, inch cubes, 2-inch rectangles, etc.

In teaching one half, teach it in relation to a thing at first, and then to a number. Divide an apple into two parts, and name each part half the apple ; divide the number four into two equal parts and name each part one half of four. Let the thing divided vary, — a square, a rectangle, a circle etc. The same general principle should follow in the third, the fourth, etc.



[The teacher will find it pleasant, as a variety, to silently read the stories, or selections, then repeat in her own language before the class, which in turn reproduces, orally or in writing.]

REPRODUCTION EXERCISES.

BY M. E. C.

SHARP EYES.

[Adapted.]

[To be used with two lowest grammar grades. May be read to pupils, or told in teacher's own language and reproduced as subject matter of a letter by pupils.]

"Look intently enough at anything, and you will see something that would otherwise escape you." I thought of the remark as I sat on a stump in an opening of the woods one day. I saw a small hawk approaching; he flew to a tall tulip-tree and alighted on a large limb near the top. He eyed me, and I eyed him. Then the bird disclosed a trait that was new to me; he hopped along the limb to a small cavity near the trunk, when he thrust in his head and pulled out some small object and fell to eating it. After he had eaten for some minutes he put the rest back in his larder and flew away. I had seen something like feathers eddying slowly down as the hawk ate, and on approaching the spot found the feathers of a sparrow here and there clinging to the bushes beneath the tree. The hawk—commonly called the chicken hawk—is then as provident as a mouse or squirrel, and lays by a store against a time of need, but I should not have discovered the fact had I not used sharp eyes.

TWITTER AND TWEET.

[Adapted.]

[The two following stories may be written upon the blackboard and read aloud by second and third primary grades before oral or written reproduction.]

Twitter and Tweet lived in a little brown house in Cherry-tree town. When they were large enough to fly, their mother gave them some good lessons. One was, "Be careful what you eat. Until you are wiser it will be best for you to eat only worms; they are safe and wholesome. There are some bugs that are very good food; but there are others that are harmful, and I cannot trust you to choose." One day the little birds were hopping along on the grass where they found a fat little bug. It looked so nice, and both birds were so hungry they said, "Let's eat him; I'm sure this is a good kind," said one little bird. "We'd better be hungry every day than disobey our mother just once," said the other little bird, "That's so," said Twitter, and away they both flew.

BEES.

[Adapted.]

Bees will accommodate themselves to almost any quarters; yet no hive seems to please them so well as a section of the hollow tree,— "gums," as they are called in the South and West, where the sweet gum grows. In some European countries the hive is always made from the trunk of a tree, a proper cavity being formed by boring. The old-fashioned straw hive is a great favorite with the bees, also.

THE SAUCY CHIPMUNK.

[Adapted.]

A saucy chipmunk presumed upon my harmless character to an unwonted degree. I had panned to bathe my hands and face in a

little trout brook, and had set a tin cup, which I had partly filled with strawberries as I crossed the field, on a stone at my feet, when along came the chipmunk as confidently as if he knew just where he was going, and quite oblivious of my presence, cocked himself up on the rim of my cup and began to eat my choicest berries. I kept still and watched him. He had eaten but two when the thought seemed to occur to him that he might be doing better, and he began to fill his pockets. Two, four, six, eight of my berries quickly disappeared, and the cheeks of the little vagabond swelled. But all the time he kept eating, that not a moment might be lost. Then he hopped off the cup, and went skipping from stone to stone till the brook was passed, when he disappeared in the woods. In two or three minutes he was back again, and went to stuffing himself as before; then he disappeared a second time, and, I imagined, told a friend of his, for in a moment or two along came a bobtailed chipmunk, as if in search of something, and passed up and down and around, but did not quite hit the spot. Shortly, the first returned a third time, and had now grown a little fastidious, for he began to sort over my berries and to bite into them, as if to taste their quality. He was not long in loading up, however, and in making off again. But I had now got tired of the joke, and as my berries were diminishing I moved away.

PUBLISHERS' ANNOUNCEMENTS.

DISCONTINUANCES.—Any subscriber wishing to stop his paper must notify the Publishers, and pay up all arrears; otherwise he is responsible for payment as long as the paper is sent.

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This is the book that has been adopted for September in the *Book-a-Month Course* (see *JOURNAL* for Aug. 14). If you have not a copy of the paper for that date at hand, write us for a copy, which will be sent you free. All orders must be sent direct to this office. Address

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THE AMERICAN TEACHER.

A. E. WINSHIP,
W. E. SHELDON, } Editors.

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ENJOY fruit, especially its teaching.

THE Book-a-Month Course is an assured success.

SEE how many autumn fruits and berries you know.

THIS is the best month in the year for school work.

A LITTLE money put into a good educational paper and good books is the best investment.

THERE will be twice as much professional reading done this year as in any previous year.

PUPILS of some of the German schools are provided with a half pint of milk and a roll each day for luncheon.

FIVE cents a day means more than fifteen dollars a year. This means one hundred books in less than ten years and a first-class educational paper all the time.

SKILL in observation is one of the tests of the good teacher. There should be some exercise frequently of such a character that the teacher may know how each pupil is gaining this power.

THE best subjects for mental training, other things being equal, are those that are connected with real life; and there should be the blending of the things in which they are now interested and those in which they are liable to be interested after school days are ended.

GEORGE W. COLBORN, Park River, No. Dak., objects to a device recently published in the AMERICAN TEACHER which brings maps into the heated part of the room when not in use and thus destroys the varnish, making new maps look old in a short time. He says that maps should be accessible, and regrets that they are frequently placed

in undesirable parts of the room. He claims that a district that can afford to buy maps can also afford to buy cases with spring rollers, thus keeping the maps in cases, free from dust and away from light that fades them when left hanging.

MARRIED WOMEN TEACHERS.

Within the last few weeks, Cincinnati attempted to rule out not only future applicants and those who married while teaching, but those already in the service. Instantly the whole country took up the question, and scarcely a paper from Bangor to San Francisco squarely defended the principle of exclusion. It appears, however, that in many cities there is a rule which requires a woman teacher, upon marriage, to tender her resignation. If she does not, the fact of her marriage is considered equivalent to resignation. Some newspapers have feebly defended the course, but as a rule the press says that the question to be considered is the qualification of the woman as a teacher under the circumstances and not the mere fact.

FLOWER PRIZES.

In response to our prize offer for the longest list of wild flowers known by pupils of subscribers to the TEACHER, a large number of lists have been received. The longest list, containing 355 names, comes from Blanche E. Jeffery, Beaver River Corner, Digby County, Nova Scotia. A beautifully executed list of 118 wild flowers, the botanical names as well as the popular being given, was from Annie Lyon, Pelham, N. H.; age, 16 years. Twenty-three lists contained more than one hundred varieties each. Many of the teachers wrote pleasantly. An Illinois teacher, whose pupils did excellent work, says: "I was very much surprised to find how many wild flowers grow in the woods near the schoolhouse, and we all enjoyed it very much."

The best two descriptive lists are from Misses Della French and Tillie Butterfield, pupils of W. L. Brown, Tustin, Orange County, California. These lists are accompanied by specimens of the native flowering plants described,—five each,—drawn and colored from life. In sending these lists their teacher says: "These are pupils in the sixth year, in a country district ungraded school. They have only received oral instruction in plants, and that incidentally as a language lesson, as it is not in the course of study. I think, considering their age and opportunity, the girls have done extremely well. They have had no instruction in drawing."

We are greatly pleased with the evidences of pleasure and profit derived from this experiment by the pupils. Think of a child naming 355 wild plants, and making out her record in such a way as to show upon its face that she knows the plants of which she speaks.

We have tried to think that we could give space to

print entire this list, but it is so long that we should not be justified in so doing.

TWENTY-FIVE DOLLARS IN PRIZES.

Devices in Arithmetic, Language, Physiology, Etc.

Wanted, devices for teaching the whole or part of any subject in arithmetic, language, physiology, or any of the natural sciences.

First Prize.—To the person sending us the greatest number of *acceptable* devices we will give eight dollars' worth of books or periodicals, the winner to make the selection.

Second Prize.—To the person sending us the ten *best* devices we will give five dollars' worth of books and periodicals, the winner to make the selection.

Series of Prizes.—To the person sending the *best* devices in arithmetic we will give three dollars' worth of books; in language, three dollars' worth; and in physiology, three dollars' worth.

No one person will receive more than one prize, that is, whoever wins the first prize will not be considered in further competition; the same with the winner of each.

If the devices have appeared in print over the competitor's name, the fact must be stated, and whether they are allowed will depend upon circumstances. Nothing should be sent that has appeared over a name other than the competitor's. State whether the device is original, or whether it was seen in school and adapted by the competitor.

Brief devices and simple suggestions will be acceptable. When possible make a rough sketch, illustrating the device. We will have them prepared for use.

Send devices as fast as possible. They will be credited, and the total number will be the basis of judgment.

The devices must reach us before December 1. We shall claim the right to publish them in either JOURNAL OF EDUCATION or AMERICAN TEACHER.

BOOK-A-MONTH COURSE.

We are greatly pleased with the reception given our proposition for a Book-a-Month Course. We are already assured a reading that makes its usefulness certain. The questions asked by our readers we will answer through our columns, and invite other questions from time to time.

1. *Must we order the books through you? Is that one of the requirements? Another asks, Why not require us to order the books through you?*

There is no such requirement, request, or suggestion. We are not launching this scheme as a financial venture. We can fill all orders for the books promptly, but we take special pains to name the publisher and price, that you

may order from him directly, or through your local dealer. We are ready, however, to fill all orders, but are more pleased to have you order the books where it will be easiest for you.

2. *Must we send the answers as soon as ready, or hold them and send all together?*

We much prefer having them sent as soon as ready, for then we can examine them in our "spare minutes."

3. *Will the "Fifty Books" announced for Oct. 3, interfere with the Book-a-Month Course?*

It is to be hoped not. Several teachers wished a larger number. They say they are "dead in earnest" to read this year; that they did not know how easy it was until they had read as we suggested the first book, and that they can easily read more. In response to several such communications we have prepared a list of "Fifty Books," with notes and comments on each.

4. *Will the questions be printed in any other form than in the JOURNAL OF EDUCATION and AMERICAN TEACHER?*

We had not thought to print them, but our subscription list has grown beyond our expectation, even beyond precedent, and it is impossible to furnish to our subscribers the prospectus, so that we shall be obliged to reprint the proposition for the course, and shall then strike off the questions upon slips for those who wish them in that form.

4. *Must we copy the questions?*

No, we are so familiar with the questions that if you merely write the name of the book and number the answers, there will be no trouble.

5. *Can we have the list faster than once a month?*

We recognize that this is the best season of the year for reading, and will try to print the entire list before Jan. 1, but with no desire to have them read faster than one a month.

6. *How can we connect the "Fifty Books" with the Book-a-month Course?*

We shall ask each reader to state which of the "Fifty" he has carefully read and shall include in the certificate of reading a list of these added books.

7. *Why not select a few of the "Fifty" and ask some questions for those of us to answer who choose?*

That is a capital idea, but we have promised all we dare at present. As soon as we have done our part of the work on the Book-a-Month list we will try the other.

8. *I notice that the first book in the course is one of a series issued by Appleton & Co. Are we to have more books in the same series, which I judge are uniform in binding? If so, I think I shall purchase the series complete, as I am sure it will be a profitable investment.*

Yes, there will be other books of this series, but all the books will not be in the series. At least three others will be in the course. It is certainly a profitable investment, but there is great variety and great difference in the relative values of the books.

SCHOOL AMUSEMENTS.

BY ALICE DAVIS, DES MOINES, IA.

LONG continued mental exertion is detrimental to the best interests of the child. School authorities recognizing this fact set apart certain portions of each day, during which the child may devote himself exclusively to recreation. In regard to the kinds of amusement it is perhaps best to allow the children to consult their own inclinations and wishes, provided they choose nothing that has a demoralizing tendency. But the teacher can and should exert as much influence over the pupil on the playground as he does in the schoolroom.

A child is never so thoroughly himself as when at play with his companions, and the teacher can gain much more knowledge of his real nature by observing him at play than he can by his connection with him in school hours. This knowledge can be used in such a manner as to advance the interests of the child, lessen the labor of the teacher, and cause the relations between the two to be much more pleasant and interesting. A person never works at such a disadvantage as when he does not know what he is doing, and no teacher can really benefit his pupil without knowing something of that pupil's individuality. Then, too, on the playground, the bad propensities of his nature are apt to become active, and his evil genius is likely to gain the ascendancy. Sometimes the wilfulness and selfishness of one pupil will spoil the recess for the entire school. In very many such instances the teacher's influence would be sufficient to avert the difficulty, reconcile the contending factions, and establish pleasant relations among those at variance.

Often the language used by pupils at play would shock a respectable savage. The influence of the teacher should be sufficient to correct those evil habits and tendencies, not from fear of punishment, but from a higher motive.

LITERARY CONUNDRUMS.

[Answers to be given next month.]

THE answer to each statement or query is the name of an author.

1. What a rough man said to his son when he wished him to eat properly.
2. A lion's house dug in the side of a hill.
3. Pilgrims and flatterers have laid low to kiss him.
4. Makes and mends for first-class customers.
5. Represents the dwellings of civilized men.
6. A kind of linen. 7. Worn on the head.
8. A name that means such fiery things, can't describe their pains and stings. 9. Belongs to a monastery.
10. Not one of the four points of the compass, but inclining toward one of them.
11. What an oyster heap is likely to be.
12. A chain of hills containing a dark treasure.



ALLAN DALE will have charge of this Department, but the questions will be answered by a variety of teachers of various grades. We have been in the habit of answering such questions by personal letters, or sending them to teachers to answer, but hereafter they will be answered through the AMERICAN TEACHER.

I want a flag for my schoolhouse. How shall I set about to obtain one?
H. MARTIN.

You ought to be able to find an answer to that question. It will not be a difficult undertaking for you to raise money enough in your school district for the purchase of a flag. Interest your scholars, make each a member of a committee to raise funds, make known your wishes to the leading men in your district, get up an entertainment or two, and you will shortly possess not only a flag, but a flag-staff from which it can float. Set about this at once. Let me know how you succeed.

My pupils read well, but they can't talk properly. I thought reading was for the purpose of making children talk. E. F. B., Penn.

Did you really think so? We talk because we have something to say, and we read to acquire this "something." A good reader does not necessarily make a good talker. You do not teach your children to talk (I use the word in the same sense in which you have used it). You doubtless hear your class read their lesson as it comes in the reading-book, and pay attention to position, enunciation, emphasis, punctuation marks, etc., but you are careful never to question them on the subject matter of what their eyes have seen and their lips have uttered. With the children it is "words, words, words." If you will require that each thought be mastered and then reproduced either by the pupil reading it or by a listener, you will approach the ideal of the value of the reading lesson.

I have just begun teaching U. S. History, and I wish you would give me some hints regarding methods. I want to make the study interesting as well as instructive.
EMILY S.

If you will glance through back numbers of the TEACHER you will discover many articles relating to history. In brief let me say, map out at first a complete topical outline of the work you are to do in history, and have all lessons assigned by topics. Omit all consideration of non-essentials. Don't insist on the details of a battle and fail for lack of time to consider the causes that led up to it and the results of the victory. Decide what dates you are to have memorized, and make these stations around which other events cluster. Provide books on history, and have the pupils read these for additional facts. Have some abstract every day; after the lesson has been talked about, give paper for the pupils to write on certain topics, and discuss the results at the next lesson.

What is the Ling system of gymnastics? Is it a Boston system? Some of us teachers in the West want some information on the system, which we often see mentioned in the eastern pedagogical journals.

MISS J., Indiana.

The Ling system is not a Boston system, though it has found its strongest expression here. It has been introduced into the public schools of Boston. It is a Swedish system, and has been in use in Stockholm nearly eighty years. Nils Poesse has written a book illustrating the system, which Lee & Shepard publish. C. J. Ensbake, Boston, has recently issued a pamphlet on the Ling system, which you may obtain by addressing him.

I have opened my new school auspiciously, but there is one fly in the ointment. I have four or five large boys who I fear are going to give me trouble. They seem interested in me now, but I am afraid the novelty will wear off, and I shall have much to contend with them later on. What shall I do?

CLARA.

You are too distrustful, and are counselling with your fears. You have doubtless read or heard stories told of the terrific struggles teachers have had with large, unruly boys, and you are conjuring up all sorts of direful thoughts, and are perplexing yourself needlessly. Pursue your work fearlessly, bravely, faithfully. By your deportment and devotion and firmness maintain your right to respect and power. Make yourself and your work so interesting that the novelty will not wear off. Keep your boys interested not only in you but in the school work, and you will develop a manliness that will save you from all trouble and apprehension. Trust your large boys; treat them like men, and they will respect the confidence reposed in them. Don't be suspicious of them, but when something occurs that calls for your consideration, make the talk about it in private. Don't wound their self-respect, and don't let them lose confidence in you and your sense of impartial justice.

There is no kindergarten in my town, and several ladies have asked me to start one. I would willingly do this, for I love children, and would like to teach them, but I have had no instruction in kindergarten work, and only know what I have read concerning it. Would you advise me to start a kindergarten, and trust to kind fortune for results, or not to undertake the work?

MINNIE F.

You might start a school for children, but you would not conduct a kindergarten without some previous training. It is an easy matter for you to put yourself in communication with some professional kindergarten, and stating your case, learn just what you can do. It will surely pay you to take a course in kindergarten training, but don't open a kindergarten until you know what you are expected to teach.

Knots and Tangles.

Original puzzles, answers, and all other correspondence relating to this department, should be indorsed "For Knots and Tangles" and addressed to Puzzle Editor, Box 886, Sharon, Pa.

90. CHARADE.

A covering for the head my first;
My next an edible grain;
My whole is a fancy, or freak, or whim;
Now surely this will be plain.

91. HIDDEN CITIES AND TOWNS, *Western U. S.*

LARA, MIESEN CO., WY., Sept. 1, 1890.

Dear Pupils:—Vacation is over, and I wish to tell you how myself, my sister Helen, and Ida Hoosan Francis, cousin of ours, spent the summer.

Ida lives in Virginia,—city girl though she is, she always enjoys country life. Though her father owns much railroad stock, to no expense will he go with his boys—Asa, Lem, and Prescott. He is as stern as a tombstone with all but Ida.

We staid in Cheyenne during July, where I learned that at last, Joseph, my brother had entered his port—landed and was even now in San Francisco. I had not seen him since we had played together under the old oak. Landseer's paintings are tame compared with that scene.

How quickly we hastened to Mrs. Sandie—go we must to see him.

The kind lady was sad but accepted our silver. City after city was passed rapidly. Ida was tired and cross. She has had a sore finger—there is a bad scar—bone came out in pieces.

She tried to amuse herself by looking at the boulders and other objects of interest. Once she saw a black hawk on a large oak.

We passed many a pleasant grove and park,—city had been succeeded by country. Ida exclaimed, "Why don't they keep the cars on the track?"

I pacified her by giving her a baker's city tart, and when day to night had been changed, she slept many hours.

On arriving at Frisco, we found my brother and his friend Mr. San Rafa-el-bowed our way to them, and received a very warm greeting. Will tell you the rest again.

Yours, etc.,

EDITH L. W.

92. NUMERICAL ENIGMA.

My whole is composed of 26 letters, and was spoken by one of America's greatest orators.

My 1, 11, 24, 8, 19, is to carve or to cut.

My 22, 14, 18, 4, is a bird.

My 12, 26, 2, 15, 25, 13, is a number.

My 7, 17, 5, 9, 21, 11, is flexible or pliant.

My 16, 23 20, is a precious stone.

My 18, 8, 7, 6, is despicable.

My 20, 10, is a personal pronoun.

93. TRANSPOSITIONS.

If I only first, I'd propose to-night,
But I do so next a "No!"

So I think I'll just keep courting on,
And let the proposal go.

94. ANAGRAMS [U. S. Presidents].

1. John A. Dorwens.

4. Arthur E. Strache.

2. Fred. J. Lagassime.

5. Dan. J. Shoam.

3. Chas. J. Manubane.

6. Sam. Joe Damsia.

ANSWERS TO SEPTEMBER PUZZLES.

85. Step-pest

86. John G. Saxe, William Cullen Bryant, John G. Whittier, Longfellow.

87. Crash—rash—ash.

88. Texas, Ohio, Maine, Indiana, Delaware, Kansas, Idaho, Iowa.

89. Current.

REMOVAL NOTICE.

The Manufacturers of Clark's Improved School Stencils have removed to No. 22 Stearns street, Waltham, Mass. Send your orders for all Blackboard Stencils, or for Catalogue of complete line of the same, to S. C. Clark & Co., Waltham, Mass.

GOOD Merchants know that it is the best policy to give their customers reliable standard goods, rather than substitute some inferior make, just to get a larger profit. When a salesman tells you that some other waist is "about as good as the Ferris' Good Sense" Waist "be sure to examine the Good Sense before you buy the imitation.

Of course every student and professional workers needs a cyclopedia as a constant companion; the only question is which one will be most useful. Do not fall before deciding this question to investigate carefully the claims of Johnson's Universal Cyclopedia published by Messrs. A. J. Johnson & Co, 11 Great Jones Street, New York.

B. F. JOHNSON & Co., whose advertisement appears in another column, have recently moved into new and larger quarters, with better facilities for conducting business than ever before. Parties wishing employment, or to more fully investigate the opportunities and advantages they offer, would do well to communicate with them promptly.

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RECREATIONS IN GEOGRAPHY.

BY ELLA J. BRADWAY.

A SCHOOL PICNIC.

ONE (lake north of Minnesota)¹ day in (cape² of N. J.) our school had a picnic. The children were wild with delight, being not in the least disturbed by the (river³ of N. Y.) (island⁴ west of Scotland) and (cape⁵ of Oregon) generally. Why? Because they met in a (town⁶ of western Vt.) instead of a (town⁷ of northern Mass.) or a (lake⁸ of British America), as picnics are wont to do; consequently they had no fear of getting any (lake⁹ of Sweden) than if they were (river¹⁰ of Bavaria) school.

Games began at once, when (cape¹¹ of Keewatin) (river¹² flowing into Hudson) proposed (capital¹³ of Denmark). This warmed the hands well, and made them so (river¹⁴ of Louisiana) that they attracted the eye of a (part¹⁵ of Austria) (bay,¹⁶ branch of Hudson Bay). He stole a kiss or two from the most rosy pair, which caused them to (capital¹⁷ of Switzerland) more than before. This happened to (city¹⁸ of Italy) (capital¹⁹ of Wisconsin), the teacher's (town²⁰ of South of France). Her brother (river²¹ of Virginia) seeing his (river²² of Australia) sister's annoyance by the unwelcome guest, pretended to make much of it. He bound some (river²³ of Ky.) on the swollen hands, and did all he could to (branch²⁴ of Danube). At last he killed the (coast²⁵ of Central America). The boys held an inquest over the remains, and reported that the (small bay²⁶ in Hudson Bay) met his death through the (cape²⁷ of N. Scotland) of Dr. (capital²⁸ of Wisconsin), (river²⁹ of Arizona) of (coast³⁰ of Central America) bites. (City³¹ of Italy) called them " (islands³² southwest of England) young ones," and they immediately started off on a foot (cape³³ of New Foundland).

[One³⁴ of the Hebrides] [capital³⁵ of Miss.] who [manufacturing city³⁶ of Eng.] in everything in our school, won, but fell sprawling on his [town³⁷ of northwest France] just as he reached the goal. When they returned they professed to be [province³⁸ of Austria] as a [Lake³⁹ of British America]. [Capital⁴⁰ of U. S.] [capital⁴¹ of Tex.] [peninsula⁴² of northwest Greenland] the small [branch⁴³ of the Amazon] boy who seemed to have little [point⁴⁴ of California coast] of the proprieties, took a little [capital⁴⁵ of China] to the capacious depths of the lunch basket, and was just on the point of slyly out a [group⁴⁶ of Pacific islands], when, meeting the [cape⁴⁷ of Ireland] [mountains⁴⁸ of Oregon] eyes of [river⁴⁹ of Denmark] [capital⁵⁰ of Nebraska], his teacher, he said, "I was just fixing the cover, Miss [capital⁵¹ of Nebraska]; it's [city⁵² of south France]. The feast was soon spread. [Cape⁵³ of Labrador] exclaimed, "[Bay⁵⁴ in Gulf St. Lawrence]! this is [lake⁵⁵ of Maine]." The [town⁵⁶ of north Scotland], the sandwiches, the cold [river⁵⁷ of Tenn.] and even the [city⁵⁸ of Italy] disappeared like a [island⁵⁹ between Sumatra and Borneo] [mountains⁶⁰ of south Africa] in summer, and the dainty cakes, the [river⁶¹ of Mon-

tana], and the [cape⁶² of north Alaska] lemonade followed. [Cape⁶³ of south N. J.]; [mountain peak⁶⁴ of British America] asked [town⁶⁵ of south Tenn.] [branch of Wabash⁶⁶] to [town on Isle⁶⁷ of Mann] her [county⁶⁸ of Vermont] for her, and also to join her in eating a [island⁶⁹ east of China sea]. The [cape⁷⁰ of northwest Washington] quite overcame him, and he simply remarked the [lake⁷¹ of north Mass.] [river⁷² of Germany] of [town⁷³ of Prussia], on her handkerchief. But he quickly regained self-possession, and joined heartily in all the games that followed. Altogether, the [isle⁷⁴ in Boston harbor] children had a delightful time, and went [bay⁷⁵ in Davis strait] happy as the day was [island⁷⁶ south of Connecticut].

Music Department.

WE must not mistake a brilliant teacher for an excellent method. What may prove very successful with an exceptionally magnetic teacher, may not, after all, be the best method for the schools at large. That is the best method which works best with the general run of teachers and pupils as we find them in our schools.

OVER-EXHAUSTIVE TREATMENT OF THE LESSON.

BY W. S. TILDEN.

THE teacher who has competent knowledge of the specialty which he is to teach is very likely to feel that the litter of facts and principles which the pupil is ready to assimilate is very inadequate and partial; and he longs for greater breadth and thoroughness at every step. It seems to him that if the child could become possessed of all those details which really belong to the subject in hand, and could see their relation to it and to each other, he would then be prepared to go on intelligently and rapidly; and there would be a satisfactory soundness in the work which it now lacks.

We do well to remember that those little things which appear to the teacher so to merge in the whole as to seem like atoms and almost lose their separate identity, must be learned one at a time by the pupil with much painstaking and reiteration. The most ordinary and incidental operations of the skilled mechanic are each to be studied and perfected singly by the apprentice, in patient and continued practice, before they seem simple to him at all; every one of them is difficult at the outset. His first constructive efforts must embrace but very few of the elements of his trade; but thus used, he comes to see them, one by one, in their proper relation to each other and to the completed work, while he is also acquiring dexterity in the management of details. Something in this way the elements of any branch of education should

be presented; only so many at the present time as are needed in the work at hand.

It is always a question in education for the mass of the people, What things and how much of them is it best to attempt? The professor or specialist in any branch requires that it be considered from his point of view. But all are not to be specialists, and the mass of the people are probably not to be the highly educated. There are the common uses for common life to be made of each subject; the ordinary mind can make only the ordinary use of it, whatever the specially gifted may do. And even if every man is a specialist in some one thing, in all other branches of study he is very much like men around him, and needs a general education for every-day uses.

In school music we are particularly to remember that all are not to be musicians,—that is, to pursue music as a profession; but it is very desirable that as many as possible should have that kind and amount of training during their elementary course which shall bestow upon them musical culture sufficient for the ordinary requirements of intelligent communities. To effect this for the mass of the children it is necessary to leave many of the fine spun distinctions in musical lore to be taken up subsequently by those whose talent and circumstances warrant it.

While we all agree to the principle above stated, we not infrequently find ourselves transgressing it practically in daily lessons. For instance, when we try to teach note-reading we become convinced that it is useless for the pupil to attempt to strike a pitch unless he has an adequate knowledge of key-related sounds, and we say to ourselves, "Now we must study sounds." The little people have a lesson to read, we will suppose, in which the difficulty is the series 3, 5, 4, 2, 1. What they need in order to overcome it is a knowledge of the sounds from 1 to 5 simply. We set to work on an elaborate plan for mastering all the possible combinations in the scale, together with its extensions above and below; never stopping till we have sung 4 and 7 in succession, as well as a multitude of other similar unmelodious things, with an imposing array of ladders, hand signs, finger staff, written scales, etc., altogether disproportionate to the obstacle which was to be surmounted. Most of this would not be called for or needed at all for a long while yet in legitimate work.

Or, we wish to carry through our little exercise in 2-4 time properly, which consists simply of keeping a regular accent through a succession of proportionate lengths. We thereupon show all the notes in common use, the use of dots, and triplets, with corresponding rests; name the different kinds and varieties of measure from 2-2 to 12-8, and teach many other strange and curious things about time in music. We wish to be "thorough." But why such a park of artillery to kill a mosquito? Better wait till some bigger game appears.

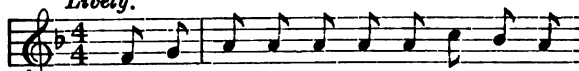
Or, again, we see a couple of sharps at the beginning of the exercise, and instead of using them for the purpose for which they were placed there, we enter upon a discussion of scale intervals and pitch intervals, and how and why the pitches found in this key are as they are. From this we go on to learn all the pitches in all the keys with the reasons therefor. On the same principle the beginner in Latin should simply commit the whole dictionary to memory, so that when he commences reading he will not have to refer to it again.

In avoiding the error of over-exhaustiveness, decide as to the present purpose. In a properly graded course in music, this has constant reference to the ultimate purpose. Make the study just exhaustive enough to meet adequately the requirements of the present purpose; and leave something to be attended to when the exigencies of a more advanced stage of study demand it.

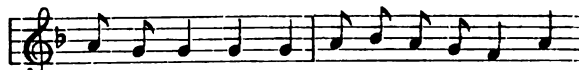
THE FIFE AND DRUM BAND.

A SONG FOR THE BOYS.

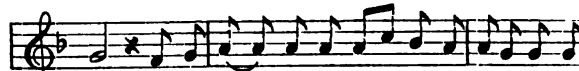
Lively.



1. We're the mer-ry lit-tle fellows of the
2. We're the stead-y lit-tle fellows of the



fife and drum band, O mer-ry lit-tle men are
fife and drum band, O steady lit-tle men are



we: From the north to the south, from the east to the
we: And the tramping of our feet, in the middle of the



west, There is not a bet-ter band than we.
street, Is a thing all want to hear and see.



Strum, strum, says the great big drum, Rumble
Strum, strum, goes the great big drum, Rumble



tum, rum-ple tum say we; Not a
tum, rum-ple tum go we; And



cur-lew or a snipe, has a shriller note or
ev-'ry one we meet when we're marching down the



pipe, than the mus-ic of the band can be.
street. Says that not a bet-ter band can be.

ARITHMETIC IN GERMANY.

BY JOHN T. PRINCE, PH.D.,
Agent Massachusetts Board of Education.

THE work done in arithmetic I found to be quite various both in extent and methods pursued. In the People's schools, in South Germany, the Grube system or some modification of it is generally taught. In these schools the first two years are given to combinations to thirty, fifty, or one hundred. In the preparatory departments of high schools the amount attempted is much greater in the same time. In some schools I found pupils "going over" all of the tables during the first year. That this work was too difficult was evident from the amount of driving which the teachers found to be necessary, and that it was not thoroughly done, was shown in the poor work of subsequent grades of pupils who had done the same kind of work in the first year.

Various devices for teaching numbers in the lowest grades were observed as will be shown in the following illustrative exercises :

In a school of the first grade in Berlin I found pupils working upon combinations to twenty, and combinations by tens to one hundred. Blocks and a numeral frame were before the pupils. The numeral frame was four feet square and had ten wires. Upon either side was a board a foot wide, concealing the balls thus :

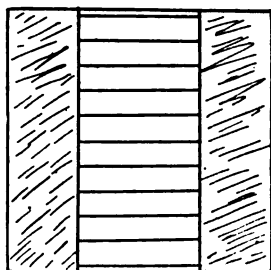


FIG. 1.

Teacher — (pushing in sight 12 balls upon the wires)
"What does 12 consist of?" (Calling upon one pupil.)

Pupil — "12 consists of 1 ten and 2 units."

Class in Concert — "12 consists of 1 ten and 2 units."

The practice of having one pupil give an answer, and when correct, to have all the pupils repeat the answer was continued throughout the exercise. The teacher in quick succession moving the balls, asked the following questions :
 $2 + 2?$ $12 + 2?$ $2 + 4?$ $12 + 4?$ $2 + 3?$ $12 + 3?$
 $2 + 6?$ $12 + 6?$ $2 + 7?$ $12 + 7?$ $2 + 8?$ $12 + 8?$
 the pupils answering in entire sentences thus : 2 and 2 are 4, etc. The same questions were given without the balls and answered as before.

The teacher continued as follows :

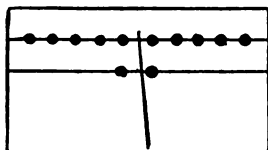


FIG. 2.

he divides the balls thus (Fig. 2.), saying "the half of 12 is 6."

T. — "2 times 6 are how many?"

T. — "How can we get the half of 12?"

P. — "Divide the 10 balls and two balls in two equal parts."

T. — "Do this with the balls."

P. — With the short pointer

P. — " 2×6 is 12."

T. — "12 is how many times 6?"

Pupils do not seem to know. Numeral frame used and all reviewed. All pupils interested and indicate their readiness to answer all questions by show of finger.

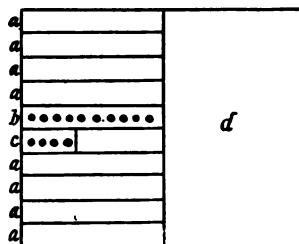


FIG. 3.

There is occasionally seen a device which some teachers like better than the numeral frame for teaching number. It consists of a frame having slides of counters on one side, and a black-board on the other, thus : (Fig. 3.)

a = slides closed ; *b* = slide wholly open ; *c* = slide partially open ; *d* = black-board raised so as to allow slide to move under it

Quite often the relation between the numbers to ten is indicated by rows of blocks upon the teacher's desk, thus : (Fig. 4.)



FIG. 4.

Large blocks are also used upon the teacher's desk to teach all the combinations to twenty. Sometimes the blocks are divided into halves and fourths. In one school of the first grade I saw

such work as the following done :

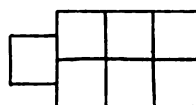


FIG. 5.

$6 \div 2.$ $8 \div 4$ $7 \div 2.$ $9 \div 4.$

To teach $7 \div 2$ the teacher placed 7 blocks, thus : (Fig. 5) then to make the divisions equal placed 3 blocks on one side and 3 blocks on the other side, dividing the remaining blocks in two parts, and placing the pile as follows :

The teacher said he taught only halves and fourths in this grade.

Combinations by tens to 100 are generally practiced in the first grade. The following notes of a visit

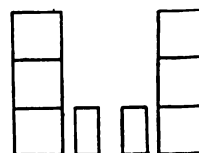


FIG. 6.

in Eisenach indicate the kind of work done in this grade.

Blocks and numeral frames used. The following questions asked and answered with and without objects :

How many more than 10 is 20?

" " " " 10 " 40?

" " " " 20 " 40?

" " " " 40 " 60?

$50 + 10?$ $50 + 30?$ $60 + 30?$

100 is how many more than 50?

" " " " " " 70?

1 mark (10 pfennigs) less 30 pfennigs?

1 mark less 50 pfennigs?

How much must be added to 20 pfennigs to make 1 mark?

How many times 20 is 40?

How many times 30 is 60?

Table of ones, two, etc., repeated forward and backward thus: 1 times 10 = 10.

2 times 10 = 20.

1 times 20 = 20,

2 times 20 = 40, etc.

Many problems like the following are given based upon the tables as just given:

Cost of 3 books at 30 pfennigs apiece? etc.

How many books can I buy for 60 pfennigs, at 30 pfennigs apiece? How many for 80? etc.

In answer to the questions in division, pupils are allowed to say " $8 \div 2 = 4$, because 2×4 is 8," and " $\frac{1}{2}$ of 10 is 5, because 2×5 is 10."

In all operations the pupils are taught quite generally

to work through and by tens. For example, in the problem $8 + 7$, the pupil is made to think of $8 + 2 = 10 + 5 = 15$, and in $17 - 9 = 17 - 7 = 10 - 2 = 8$, etc.

The following notes of recitation of a third year class give a good example of rapid reckoning, and of the means of attaining quickness and accuracy:

Teacher gives rapidly $4 + 8 + 9 + 6$, etc., until the sum is over 200.

Several similar problems given, followed by problems in subtraction, beginning with a large number, and calling for successive subtractions as, from 208 take 6 take 8, etc. This is not given very rapidly, at the rate of about 18 numbers to subtract in a minute. Adding and subtracting by 2's, 3's, etc., followed by mental problems in multiplication and division.

Teacher gives problem $48 \div 40$.



GRANDPA'S TICK-TOCK.

BY ANNIE SCHLESINGER.

DEAR grandpa winds the great high clock,
And turns the big round key;
His pet, the brown-eyed little May,
The "tick-tock" wants to see.

He turns and turns the iron key,
And makes the cuckoo sing.
While happy May, she laughs right out,
Her brown eyes wondering.

"Do, grandpapa, please hold me up."
And grandpa must obey.

"I want to hear it in my ear,
To see what it will say."

"Please, grandpapa, show me its tongue."
Again he must obey.

"Now tell the tick to show its eyes,"
Commanded little May.

The old man wound and closed the clock,
Took out the iron key;
He said, "I never knew, my pet,
That grandpa's clock could see."

"It sees,—it sees,"—persisted May;
"It sees, I almost know;
Whenever I go out to walk,
Its ticking says, 'Go,—Go.'"

Then grandpapa, so sore perplexed,
Says, "Tick-tocks have no eyes."
But May, with frown and pouting lips,
Takes grandpa by surprise.

"You blinded out the poor tick's eyes
With that old ugly key.

You made its eyes black holes,—you did;
And, course, the tick can't see."

Dear grandpapa, he took her up;
"I'm sorry, dear," said he;
"But grandpa wouldn't want a clock
To talk, and sing, and see."

PUMPKIN PIE.

BY LILIAN RAY.

[The Goddess of Pumpkin Pie stands at back of stage. Enter the "three little maids from school." They approach her, making bows.]

Maids.— Three little maids from school are we,
Joyous and happy, and full of glee;
Home for vacation, and glad to see
The Goddess of Pumpkin Pie.

Goddess.—Who can eat a pumpkin pie?

Maids (in turn).—I, I, I.

Goddess.—Who can bake a pumpkin pie?

Maids (in turn) each give a sigh.

Goddess.—Now here's the recipe, good and true,

Which I will gladly give to you. [Hands it to them.]

When all is ready tap that bell,
And forth will come, as in a spell,
All things you need; so do you well.

(Girls take turns in tapping the bell for the articles to enter.)

(Enter two boys with large yellow ties.)

Boys.— We have come to represent
At your call our pumpkin race.

(They bow, and stand at one side.)

(Enter two girls with white aprons.)

Girls.— Eggs you're wanting.

Our white shells
Of good health
Right plainly tell.
Mr. Smith no butter sells.

[The name of any grocer may be used.]

(Enter two boys with light and dark brown ties.)

First Boy.—I'm the ginger.

Second Boy.—I am cloves.

Together.—Don't get us too near your nose.

(Enter two girls in white caps and ribbons.)

Girls.— We're the flour so white and clean,
Better you have never seen.

(Enter two boys with large cream-colored ties.)

Boys.— Milk is very good to drink,
Which we can testify.
For pumpkin pie, you'll need, I think,
Our brown jug's best supply.

(Enter two girls in white dresses.)

Girls.— We will be your sugar sweet;
Taste of us, we're good to eat.

☐ (Little maids now march among the materials as though mixing, and all sing to the tune of "Yankee Doodle":)

We will have a pumpkin pie, pumpkin pie, pumpkin pie,
We will have a pumpkin pie
For Thanksgiving dinner. [Repeating until thoroughly mixed.]

[Little maids stand at side. Girls representing articles join hands in close circle. Boys form a large circle around them. All kneel down, while maids advance and thoroughly look them over and nod to each other with satisfaction.)

First Maid.— Now it's ready for the baking.
Second Maid.— Oh, what fun there is in making
Three Maids.— A good pumpkin pie.

(Three little maids kneel before the Goddess.)

Goddess.— Blessings on you little maids,
These materials, and all aids.
Blessings on your pumpkin pie.

(Exit goddess, three maids, and others in pairs.)

MARCHING EXERCISE SONG.

Tune: "Nelly Bly,"

BY ADA SIMPSON SHERWOOD.

HERE we go, to and fro,
Marching in a row,
Up and down the schoolroom bright,
Keeping time just so.

Chorus.—One two, three, four,—keeping time just so,
Up and down the schoolroom bright, see the children go.
[Repeat.]

Faces bright, stand upright,
Sing a merry song;
Isn't this a happy sight,
As we march along?

Chorus.—One, two, three, four, etc.

Wild birds fly, through the sky,
Happy, glad, and free;
Yet within our schoolroom bright,
Happier far are we.

Chorus.—One, two, three, four, etc.

Still we go, to and fro,
Gaily march along,
While our merry voices ring
In a marching song.

Chorus.—One, two, three, four, etc.

Now we stand with each hand
Raised above our head,
While we give our exercise,
As our teacher said.

Chorus.—One, two, three, four,—keeping time just so,
While we give our exercise, standing in a row.

Up and down, right and left,
This will make us grow;

Now we all will swing our arms,
Standing in a row.

Chorus.—One, two, three, four, etc.

Now we'll rest, that is best,
When our song is done,
Studying with newer zest
For the strength we've won.

Chorus.—One, two, three, four,—all to study go,
For we've had our merry song, marching in a row.

NOTE.—After the marching and arm movement, as indicated in the verses, the pupils should be seated for the last verse.

FROGGY AND MR. SNAKE.

BY L. F. A.

SAID the frog to a snake passing by,
"Why so flat on the ground do you lie?
Why not give a great jump, as do I?"

"There is not much to see on the ground,
Why don't you jump up and look 'round?
There are great sights to see, I have found."

"Oh, jumping's so rude!" said the snake.
"But much pleasure in running I take;
Will you run with me down to the lake?"

"Oh, certainly," Froggy replied,
And to run Froggy tried and he tried,
But he only could jump; and he sighed.

But as the Snake gracefully sped
Out of sight, Froggy stood on his head:
"I prefer to be rude, then," he said.

DO YOUR BEST.

BY E. IDELLA WALLACE.

I'VE something to tell you,
A plan you can try,—
How to be very good,
As the hours go by.
A plan very simple,
For child or for man;
And this is the way,—
"Do the best that you can."

But that means a great deal,
And so it is plain,
If we fail the first time,
We must try yet again.
In all this wide land,
In the East or the West,
If we want to succeed,
We must just do our best.

A FELLOW'S MOTHER.

"**A** FELLOW'S mother," said Fred the wise,
With his rosy cheeks and merry eyes,
"Knows what to do if a fellow gets hurt
By a thump, or a bruise, or a fall in the dirt.
"A fellow's mother has bags and strings,
Rags and buttons and lots of things;
No matter how busy she is, she'll stop
To see how well you can spin your top."

"She does not care—not much, I mean,
If a fellow's face is not always clean;
And if your trousers are torn at the knee
She can put on a patch that you'd never see.

"A fellow's mother is never mad,
But only sorry if you are bad;
And I tell you this, if you're only true,
She'll always forgive you whate'er you do.

"I'm sure of this," said Fred the wise,
With a manly look in his laughing eyes,
"I'll mind my mother, quick, every day;
A fellow's a baby that don't obey."

—Selected.

SOLDIERS.

BY LAURA F. ARMITAGE.

HEAR the noise of horn and drum,
The tramp of little feet,
And from my window look to see
What's coming down the street.

It is a band of soldier-boys;
The captain brave is Fred;
He waves his shining sword of tin,
And walks with heavy tread.

Then Walter comes, with flag held high,
And then comes little Jim,
He beats the drum with all his might,
And all heep step with him.

And last of all comes little Joe;
He's only three years old;
He blows upon a horn so shrill,
Hands to my ears I hold.

Oh army brave of little men,
With hearts so stout and true,
When you have older grown, you'll find
There's work for you to do.

There are hard battles to be gained
In fighting for the Right,
'Gainst wrong and angry words, you all
Must strive with all your might.
Temptation must be beaten back,

And Selfishness and Greed;
And evil thoughts must be put down,
If you would win, indeed.

And may you bravely battle with
These foes that will appear,
And keep your hearts both pure and strong,
To meet them without fear.

THE GOLDEN KEYS.

A bunch of golden keys is mine,
To make each day with gladness shine.
"Good morning!" that's the golden key,
That unlocks ev'ry day for me.

When evening comes, "Good night!" I say,
And close the door of each glad day.
When at the table "If you please!"
I take from off my bunch of keys.

When friends give anything to me,
I'll use the little "Thank you" key.
I'll often use each golden key,
And so a happy child I'll be.

—Selected.

Notes and Queries.

Questions and answers for the Notes and Queries should reach us by the first of each month. We respectfully request all the readers of THE TEACHER to take part in the discussions of this department. Send in questions, and furnish answers to questions given.—Eds.

ANSWERS TO QUERIES.

650. "*His being a foreigner was no excuse.*" Dispose of words in italics.

The phrase, "*being a foreigner*," is used substantively. "*Being*" is a participle; "*foreigner*" is used as object of the participle.

H. I. B., *Beaver Crossing, Neb.*

Credit to C. J. E.; also to J. E. M.

I cannot accept the disposition of the words "*being*" and "*foreigner*" as given in the June TEACHER,—Ans. No. 650; viz, "*The phrase 'being a foreigner' is used substantively. 'Being' is a participle; 'foreigner' is used as the object of the participle.*"

Please review with me a few definitions, and then let us reason together a little.

Def. 1: A verb is a word whose office in a sentence is to express action, being, or state. Now we readily see that verbs naturally fall into two general classes as to the manner of expressing the action, being, or state. The first class includes all those verbs whose office is to assert action, being, or state; as, *The dog caught the rat*; *The man is old*; *The clock hangs on the wall*.

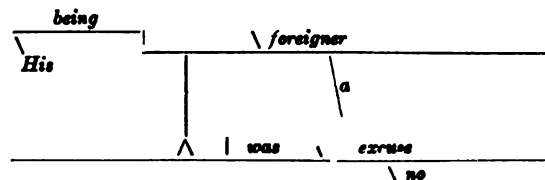
The second class includes all these verbs, whose office is to assume action, being, or state; as, *To teach is pleasant*; *His being a foreigner is no excuse*; *The man died, pierced through the heart*.

Def. 2: A transitive verb is one whose meaning requires an object (expressed or understood) of the action expressed by the verb.

Def. 3: An intransitive verb is one whose meaning does not require an object. By examining definitions 2 and 3, we see that all the transitive verbs are action-words and that part of the action-words are intransitive verbs.

Now let us compare our being-words and state-words with these definitions, 2 and 3, and we readily see that since neither being-words nor state-words express any action, they cannot take objects and must be intransitive. As "*being*," in the given sentence, is a being-word and expresses no action, there can be no object of its action; it is intransitive, and cannot have an object.

Below I give what I think to be the correct analysis of the sentence and parsing of the italicized words:



"*His being a foreigner*" is an abridged noun clause used as the subject of the sentence.

"*Being*" is a verb, the predicate of the abridged clause, a participle with the construction of a noun, the principal word of the abridged clause, and the logical subject of "*was*"; *His being* was no excuse. But the being has an attribute, that of foreigner. It is modified by the possessive pronoun "*His*." (Reed and Kellogg's *Higher Lessons in English*, Lesson 38.)

"*Foreigner*" is a noun, common, third person, singular number, masculine gender, nominative case, the attribute complement of the abridged clause. (Holbrook's *Comparative English Grammar*, P., 180, §1078. "The attribute of the abridged clause is in the nominative when its subject is in the nominative or possessive; as, *John being a boy* was unable to labor continuously; *His being a student* was no reason for *his being a savage*.")

O. B. ZELL.

657. A $\frac{1}{2}$ pitch roof is put on a rectangular house, 36×42 ft., with flat deck at top, 8 ft. above the base. What is the size of the deck? What is the length of the side and corner rafters? M. V.

The rafter to a $\frac{1}{2}$ pitch roof forms the hypotenuse of a right-angled triangle whose altitude equals $\frac{1}{2}$ its base; then the side rafter will have a 12 ft. base with an 8 ft. rise; then $\sqrt{(8^2 + 12^2)} = 14.42$ ft., length of side rafter. The corner rafter will have a run (base of triangular, of which it is the hypotenuse) equal to the diagonal of a 12 ft. square; then $\sqrt{[(12^2 + 12^2) + 8^2]} = 18.76$ ft., length of corner rafter.

IRA L. C., Colby, Wis.

662. James Gibbons, age 44 years, takes out an endowment policy for \$8000, payable in 16 years; reckoning interest at 6 per cent. on his payments, will he gain or lose if he lives to receive the endowment?

According to the ordinary life table the premium on \$1000 at 44 years is \$35.94; $\$35.94 \times 8 = \287.52 , yearly payment on \$8000; $\$287.52 \times 16 = \4600.32 , paid in premiums on \$8000; first payment, \$387.52, draws, or would draw interest for 15 years; second payment, \$287.52, draws, or would draw interest for 14 years; and so on down, making 120 years, altogether. $\$287.52 \times .06 \times 120 = \2070.14 , amount paid in interest; $\$4600.32 + \$2070.14 = \$6670.46$, amount of premium and interest; $\$8000 - \$6670.46 = 1329.54$, gain.

H. I. B., Beaver Crossing, Neb.

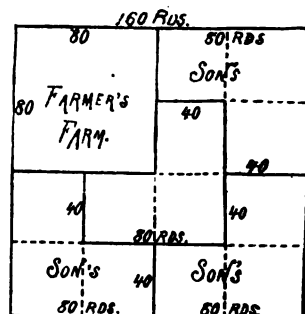
670. A pole is 16 feet high; how far from the ground must it be cut so that the piece resting with one end on the pole will strike the ground just eight feet from the base of the pole?

As 8 is the base of a right-angled triangle, the sum of whose perpendicular and hypotenuse is 16, the right of the pole; and again, as 8 is the base of a right-angled triangle whose perpendicular is 6, and whose hypotenuse is 10, 6 must be that part of the pole remaining in the ground, and is therefore 6 feet. This is a logical solution, based upon Carpenter's Theorem for drawing a square on a right angle. The question can be easily solved by algebra.

Z. RICHARDS.

671. A farmer has 160 acres of land, in shape a square. He reserves a square in one corner, containing 40 acres, for his own use, and wants to divide the remaining 120 acres among his four sons, so that each son may have the same amount and that the four pieces may be exactly the same shape. Give diagram of the division.

Description of the manner of division of the farms. Divide the whole square of 160 acres into four equal squares. Reserve one of these equal squares for the farmer. Then divide each of the three remaining squares into four equal squares. Take the three small central squares, which are contiguous to the inner corner of the farmer's large square, for one farm, for one son; and the three remaining squares, which are contiguous to each of the three other corners, for the other farms. (See the diagram.)



Z. RICHARDS, Washington, D. C.
Credit to G. E. B., Johnville, N. B.; E. G. W., N. Dorset, Vt.; L. E. G., Parkersville, N.Y.; J. L., Springfield, Mo.; C. L. F., East Peoria, Ill.

674. A man was given \$100, with which to buy 100 head of stock; he was to buy cattle, sheep, and geese, paying \$10 per head for the cattle, and \$1 per head for the sheep, 12 cents apiece for the geese. How many of each did he buy?

7 cattle,	\$70
21 sheep,	21
72 geese,	9
100	\$100

A. J. R., East Holland, Mich.

Credit to B. E. G., Johnville, N. B.; E. G. W., N. Dorset, Vt.

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675. What poets have been poet laureates of England?

Edmund Spenser, ———. Lawrence Eadsen, 1719-1730.
Samuel Daniel, ———. Colley Cibber, 1730-1757.
Ben. Jonson, 1630-1637. William Whitehead, 1758-1785.
William Davenant, 1687-1668. Thomas Warton, 1785-1790.
John Dryden, 1670-1688. Henry James Pye, 1790-1813.
Thomas Shadwell, 1689-1692. Robert Southey, 1813-1843.
Nahum Tate, 1693-1714. William Wordsworth, 1843-1850.
Nicholas Rowe, 1714-1718. Alfred Tennyson, 1850-—.

E. G. W., North Dorset, Vt.

Credit to C. L. F., East Peoria, Ill.

676. What are the essential provisions of the Samoan treaty between the United States, England, and Germany, lately ratified by the U. S. Senate.

The treaty guarantees neutrality of the islands, allows Samoans to choose their own king, provides for a chief justice to be named by the three signatory powers, but in case they are not able to agree, he is to be named by the king of Norway and Sweden, this chief justice to be removed upon complaint of any one of three powers; provides for a settlement of land titles and for the levying of import and export duties on certain articles.

C. L. F., Illinois.

679. Two men, A and B, start from opposite directions, and travel toward each other. After meeting on the road, it takes A 25 hours to travel the distance B had come, and B 36 hours to travel the road A had come. How long is each traveling the whole distance?

If A travels the distance B had come in 25 hours, and B the distance A had come in 36 hours, then the ratio of one to the other will be $\sqrt{(\frac{1}{25})}$, or $\frac{1}{5}$. If B travel $\frac{1}{5}$ as fast as A, then 25 hours must be $\frac{1}{5}$ of time traveled by A before meeting B, or 30 hours. $30 + 25 = 55$ hours, A's time. If 30 is $\frac{1}{5}$, then $30 + 36 = B$'s time.

JOHN L., Springfield, Mo.

680. A circular lot, 15 rods in diameter, is to have three circular grass beds just touching each other and the large boundary. What must be the distance between their centers, and how much ground is left in the triangular about the main center?

Inscribe within the circular lot a hexagon. Each side of the triangles composing this hexagon is equal to the radius of the circle, being equilateral. Let fall a perpendicular from the center of circle to opposite side of equilateral triangle, dividing it into two right-angled triangles. This bisects the base. (2") Draw three hexagons around the common center. Now if the diameter of the lot is 15 rods, the radius is 7.5 rods, and the base of the right-angled triangle is $\frac{1}{2}$ of 7.5, or 3.75 rods.

Inscribe within the small hexagon a circle which shall touch each of the smaller circles and the larger one. At the point of contact with the smaller circle, let fall a perpendicular from center to this point. This will bisect one of the equilateral triangles composing the small hexagon forming a second right-angled triangle. Since the base of the equilateral is 3.75 rods, and this is bisected, we have the base equal 1.875 rods. The square of hypotenuse, 3.75 — square of base 1.875 gives 14.0625 — 3.515625, and the square root is 3.2491 rods, the radius of small circle, and the distance from centers is twice this, or 6.4982 rods.

Form a triangle with the centers of small circles as its angles. This also is equilateral, each side being twice the radius of small circles, or 6.4982, and its area is the product of 6.4982×3.2491 , or $21.1133 +$ rods.

This triangle is equal to $\frac{1}{4}$ or $\frac{1}{4}$ area of small circle + the small triangle at center. Area of small circle = $38.15477 +$ rods, and one half this area is 16.577387 ; $21.1133 +$ rods — $16.577387 = 4.5359$ sq. rods, area of small triangle at center. Distance from centers 6.4982 rods; area of small triangle at center, 4.5359 sq. rods.—Ans.

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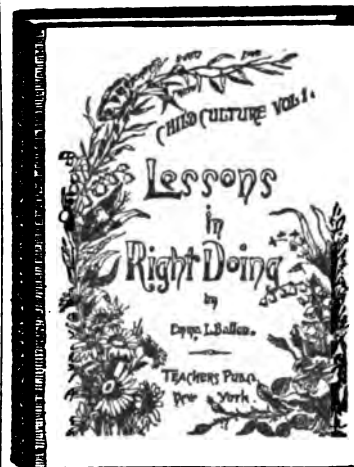
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QUERIES.

708. A farmer took 20 bu. of wheat to mill. The miller would grind it for one fourth, or for 25c. a bu. The farmer accepted the latter offer. Did he gain or lose, and how much?

709. What was put on board the schooner Michigan when it was sent over the falls of Niagara in 1829.

710. What is meant by the "almighty dollar"?

J. D. C., *Lilly, Ill.*

711. What is meant by "He has gone up Salt River"?

712. How did the name Brother Jonathan originate?

713. Who is said to have saved the Union three times?

J. D. C., *Lilly, Ill.*

714. Where and when did Alice Dobbins, the author of the poem, "Jim," live? Did she ever write anything else?

715. What President once held an interest in a distillery?

716. The base of a right-angled triangle is 13 ft. The perpendicular and hypotenuse are whole numbers. What are they?

A. W. K.

717. An old gentleman, having 120 turkeys, decided to keep one half to dispose of himself, and divide the remainder (60) equally between his two sons. He (the old gentleman) sold his flock at the rate of 5 turkeys for \$2.00; one son his flock at 2 turkeys for \$1.00, and the other son 3 turkeys for \$1.00. On counting the proceeds, the old gentleman found that he lacked \$1.00 of having as much as his sons. How does this happen?

N. M., *Chico, Cal.*

718. The distance between the earth and sun is 91,600,000 miles, and at that distance the semi-diameter of the sun subtends an angle of 16'. What is the diameter of the sun?

719. Which is correct, "To be him is a disgrace," or "To be as is a disgrace"?

720. How many asteroids are now known?

721. How many satellites are now known in the solar system?

722. Can any reader give me a rule for measuring rubber baling without unrolling?

J. M. L.

723. A man borrowed \$585 at a bank interest of 10%, payable in advance. At the end of the first year he comes to the banker with \$300, saying: Deduct the interest for the following year, and credit me with the balance. What was the indorsement on the note?

W. M. H. W.

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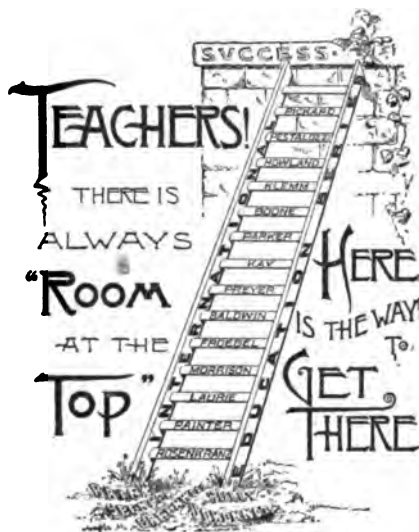
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year's time twenty-five children had passed through the kindergarten. Then the question arose what to do with them. Should they be allowed to drift away into darkness again, or should an effort be made to continue their education? It was decided to establish a school, which was finally called the Workingman's School. The methods of the kindergartens were continued to meet advanced needs. The material and tools selected conform to the child's physical strength. Plates of clay of irregular outline, ten to fifteen inches in length and breadth, and about one and a half inches thick, are given to the pupils. The first lesson consists in the construction of a square. They proceed from this to other geometrical forms and to modeling objects, useful or natural. When old enough to work in wood, that industry is commenced. Scroll saws are introduced. The pupils are encouraged to design. There are instructions about tools belonging to the various handicrafts. The hand begins to follow the direction of the mind, and mechanical drudgery ceases. Besides this technical instruction in industries, study is also added in these grades. Manual work for girls, also, claims a much needed place. The cutting and fitting of garments is properly taught; also original ornamental designing. There are now several hundred children reaping the benefits of this wise instruction. The annual expenses are about twenty-five dollars per pupil, all of which is furnished by private contributions, the school receiving no



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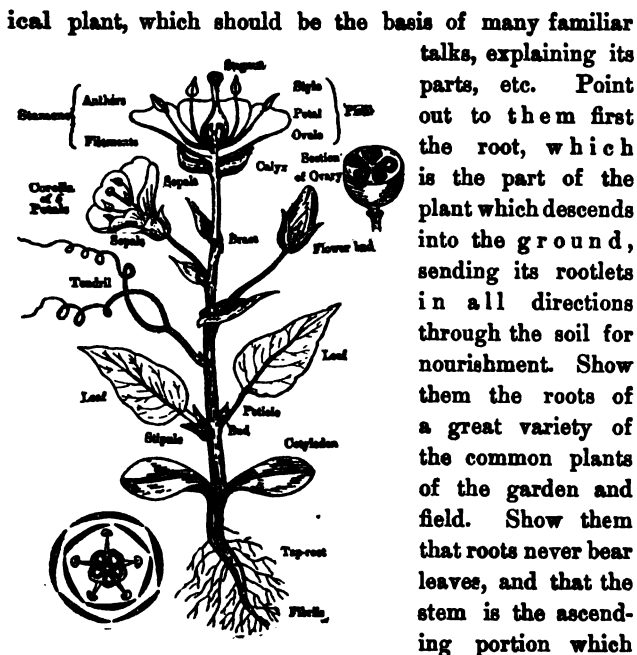
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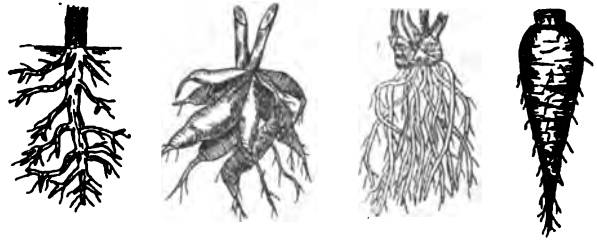
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bears the leaves and flowers. With very young children the technical names of the several parts of a plant should not be given. Show them that the leaves usually consist of a flat expanded portion, which is called the *blade* and the *leaf stalk*, and that they vary in shape as shown by the specimen or as illustrated by the pictures.

Interest the children in the study of the leaves by teaching them that they take in a large portion of the plant's



food from the air, and assimilate or digest both this and that which is absorbed by the roots.

In subsequent lessons explain the organs of reproduction,—the flower which consists of two cups. Show the



outside one, which is usually green and called the *calyx*; the inner one, usually colored, called the *corolla*, and that within these cups are the essential organs of the flower, as they form the seed, and are called *stamens* and *pistils*. Show that the stamens consist of a number of thread-like stalks, each bearing a little sac called the *anther*. Show that the anthers are filled with a powdery-looking matter, called *pollen*. Show the centre of the

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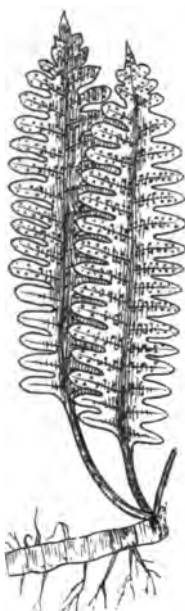
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flower, which is called the *pistil*, which consists of three parts,—the seed vessel at the bottom (the *ovary*), containing young seeds, the *stalk or style*, and a rounded or flattened head, called the *stigma*. The fruit is simply the ripened ovary, and the ripened ovules are called seeds. Not all plants have all of these organs. To show the children that plants do not all have flowers, exhibit the fern, which has *spores* on the under surface of the leaves, which answer the purpose of seeds in reproduction.



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ing, writing, and slate-work are acquired. All this is not only a preparation for the intellectual training usually regarded as the peculiar functions of the schools, but a very substantial advancement in that training.

2. On the moral side, the effects of good kindergarten training are traceable in the first manifestations of a sense of justice, one child learning to recognize the rights of other children as limitations on his own rights; in habitual acts of kindness and generosity, evincing a disposition to yield to others what may gratify them but cannot be demanded of them as a matter of right; in polite manners; in truthfulness, its opposite never being fostered by harsh discipline; in an eager desire to please the teacher; and finally, to refer to a characteristic which may certainly be ranked as a virtue, in personal cleanliness and neatness. Of course it is not said or implied, that moral training is absent from the primary schools, but it appears to be true that the kindergarten training is peculiarly designed to accomplish the ends of moral instruction.

3. The kindergarten would certainly give to the five-year-old children now in our schools,—and to many even younger,—a kind of training much better suited to their wants than is the training now generally given in the beginners' class. Better classification, and therefore better instruction, would result from placing the youngest children by themselves in a kindergarten.

4. As to discipline,—the chief point on which opinions differ,—the evidence proves that the spirit of the discipline in some primary schools is not in harmony with that of the discipline in some kindergartens. There are sometimes kindergartens in which unguided activity,—mere play,—comes too near being the rule; on the other hand, there are primary schools in which repressed activity,—unoccupied quietude,—would seem to be the principal aim. But there is no doubt that the best kindergarten discipline and the best primary discipline are alike in spirit and effect, and that, with im-

provement on both sides, the difficulties arising from inferior discipline will pass away. Such improvement would be strongly promoted by the more intimate association of primary school and kindergarten now proposed.

5. The kindergarten affords a much-needed protection from the injurious influences of the street during that period of life in which the child is old enough so stay out of the house, but not old enough to take hold of the primary school work as now set before him.

6. For those unfortunate children,—and they are many,—who suffer from parental carelessness, indifference, ignorance, or poverty, the kindergarten measurably supplies what the home does not,—kindly nurture in the virtues and graces of a more refined and elevated domestic life.

The report of the committee referred to, and which was unanimously adopted, contains one paragraph which we reproduce, as it conveys, in brief, important information that should serve to remove a prejudice and misconception that have existed, in some minds, in regard to the work and mission of the kindergarten:

A kindergarten is sometimes regarded as much the same thing as a day nursery to which very young children, especially of the poor, may be sent for safe-keeping while their parents are busy with other cares. But as a day nursery is not, and a kindergarten is a place of training, they are evidently not the same. Neither is a kindergarten a primary school, for its instruments and methods are very different; it does not make use of books, or of common school appliances, nor does it claim or desire that discipline or repression which our primary pupils are generally subjected. The kindergarten is properly a school to train little children as if they really were little children; to train them certainly, but not to subdue them; to give them moral and physical training quite as much as intellectual, and so give it as to make them glad to receive it, and able to avail themselves of it.

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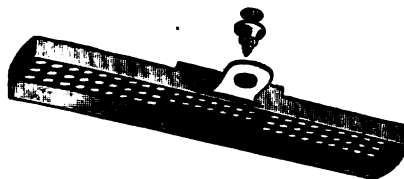
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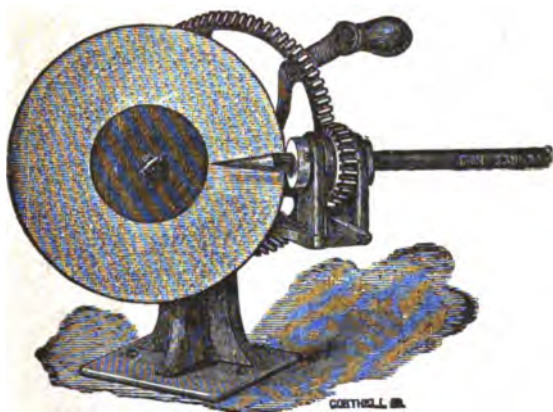
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No 3

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[Adapted.]

"SEE your handsome cover,"
A child said to a book,
"But are you, all through, goodness,
Exactly as you look."
"When books are gilt at edges,
And bound in red and blue,
That ought," the book cried proudly,
"To be enough for you."
"No, no, dear one," the child said,
"To play a good book's part,
You must—as well as outside—
Be golden at the heart."
"Have you a heart of gold, then?"
The angry book replied,
"Come, cut your pages, show me
How good you are inside!"
The child received the lesson,
And strove with stronger mind,
That all her leaves of life should
Be beautiful to bind.

GIVE AND TAKE.

BY SARAH K. BOLTON.

A blue-eyed child, singing along the street,
Was scattering flowers, as golden as her hair.
She had not dreamed of sorrow; earth was fair
As Paradise may be; to live was sweet.
The years went by; a maiden, grown complete
In loveliness, her face untouched by care,
All pink and white as apple-blossoms are,
Was scattering flowers; the tender words that greet
The tired and lonely; gentle deeds of love
That make a woman seem a thing divine.
The years went by, and children on her breast
Laid fragrant flowers, and birds her grave above
Sang sweetest music; thus our lives entwine;
Who blesses others, shall himself be blessed.

— "In everything give thanks!
For the sweet sleep that comes with night,
For the returning morning's light,
For the bright sun that shines on high,
For the stars glittering in the sky,—
For these, and everything we see,
O Lord! our hearts we lift to Thee;
In everything give thanks!"

TALKS WITH YOUNG TEACHERS.

BY W. L. JAQUITH.

DISCIPLINE.

ANY of us remember the temper with which we regarded this subject in student days as we looked forward to the work of teaching. It was the "conquer-or-die" spirit, and not until we had substituted a more humane motto, or such a different wording of this that it looked like another thing, did success crown our efforts. For a school held in control through fear, is not controlled in any true sense; is not in a condition to achieve the ends for which it exists. Only when teacher and taught move together in loving leadership and glad allegiance, is true discipline attained.

Recognize this as the ideal condition indispensable to true teaching, and as you prepare each day's lessons, make it your habit to give a little thought to this subject. Study your experience as you would a problem. Why did that boy make a disagreeable answer? Did your too harsh treatment invite it, or is he permanently disaffected? Watch to-morrow, and find out. Are there any seats that might be changed with advantage to the public weal? What is the cause of that girl's apparent inattention and carelessness? Is she shy, or has she been absent so much that she is beyond her depth, or is it simply a bad habit to be corrected? Bring all your penetration and ingenuity to bear upon the special features that each day brings. In this way, incipient rebellion may be checked, and evils may be noiselessly cured by removing the cause.

Remember, however, that good discipline is a great connected whole, and cannot be secured merely by giving attention to details. Back of the teacher's aims and methods must lie a wise, strong personality, always acting by its own inherent virtues on the young souls about it. See first of all that you are a manly man or a womanly woman, with nothing in your life that you should blush to have young eyes rest upon, and with a reverent appreciation of the possibilities of your high calling. Feel that you are working most of all for those you teach, not for that pleasant monthly or quarterly instalment, nor for your superintendent even, but chiefly for the children. And remember that they demand from you always and everywhere, nothing less than your best. Alike in the little unpainted schoolhouse at the cross-roads, and in the

towering structure of brick and granite, the children are waiting for the very best thing you have to give them.

We know that the best thing in the world is love, and this you must bring to your pupils, before you can give them the highest help. You are surrounded by a multitude of young hearts, some from happy homes, some with a pitiful ignorance of kind words and ways, but whoever they are, all ready to love you and serve you loyally, if you will show them how. Meet them half way. Not long ago I heard a boy's mournful story of a loveless schoolroom, in which all the boys were leagued against the cross teacher. I said, "Suppose you take her some flowers. You don't know how bad boys annoy their teachers; no wonder they get tired and discouraged. Carry her the flowers, and be bright and smiling." He shook his head incredulously. "It wouldn't be any use. I began that way, but it didn't do any good; she just flies right out at you." Naturally I felt some curiosity to see this lady, and when one day I chanced to get a glimpse of her, I ceased to wonder at what I had heard. She had a face without a ray of genuine kindness, on which the unlovely characters of selfishness were plainly written. What right has such a person in a schoolroom?

Remember that the teacher's smile is the child's sunshine, and try to make the atmosphere habitually cheerful. So many of us fail in not being sympathetic! We forget that the child has his point of view, as true for him as ours for us; we should gain much by crossing to it occasionally, and taking a look from that side. The greatest difficulty in discipline may arise from the harsh, unyielding attitude that makes the child hate the teacher, and delight to annoy him. Study to find the pleasantest ways of doing things. Because a disagreeable thing must be said, don't make it unnecessarily harsh by a severe manner. I once learned a lesson on this point from a charming mother of four boys, who worshiped her with almost romantic devotion. She denied a request, or sent a refractory child to bed as sweetly as she would have received a caller. There was adamant behind, as the boys well knew, but it kept them within bounds all the more surely for being covered with velvet.

I am not much in favor of corporal punishment. Undoubtedly it is sometimes necessary, but there must be something wrong when it is a common thing. Regard it as a last resort, not to be used till other means have failed. Any case that is at all within your scope, try to settle yourself, instead of sending it to the master. As you visit other schools, watch the teacher's manner, and see what an effective weapon quietness is. It is not the multitude of words that counts; they are very likely to do mischief, especially when edged with sarcasm. Beware of that, it is a dangerous and cruel weapon. While some offenders may possibly be in nowise injured by a touch of it, others will be deeply hurt, though they make no sign.

To sum up, be beforehand with your pupils. Govern by

winning their love, so that you can easily lead them, instead of trying to drive.

To evade difficult duties from weak good-nature is no kindness. Certain grave evils which are met in all schools must be dealt with seriously. Prominent among these is deception, which appears in so many forms. Remove all unnecessary temptation, but when, despite your care, it shows itself, let your pupils see that to you falsehood is a hateful thing, and try to make it so to them. They are to avoid it not merely through fear of punishment, but because it is mean and cowardly. Let every teacher in the land contribute his share towards training a generation of men that will not soil their hands by dishonor, to grasp any prize, however tempting.

GRADING COUNTRY SCHOOLS.

BY COUNTY SUPT. J. M. BERKEY, PENNSYLVANIA.

CAN country and village schools be graded, and the work in them regulated by a course of study? Those who have carefully observed the work in the district schools from year to year have no doubt been impressed with the lack of system and the damaging results of the frequent change of teachers. Each teacher is a "law unto himself," and very generally his work is not at all in harmony with that of his predecessor. If he be scholarly, experienced, and zealous, his work will be felt and appreciated; but it may require months to get his school properly graded and classified, because of the different plan or unwise policy of a former teacher. He leaves no record to his successor, who, not knowing or understanding the plans and purposes that prevailed the previous term, likewise fails to make the proper connection; and thus each term's work becomes a separate, disconnected element in the child's education. Instead of this, the school should constitute a continuous and progressive line of work, from the lowest to the highest grades. There ought to be a common basis of classification, and a general outline of work and study adapted to each grade. And when a teacher takes charge of a school, he should have a sufficient record of each pupil's standing, so that he may know at once just what has been accomplished, and where his work should begin.

Very frequently we find pupils advanced far beyond their ability in reading and spelling, while they have not the first principles of language training or number work. We find many at the age of ten or twelve trying hard to "go through" the large geography or the advanced arithmetic every term, while they ought to be limited to the elements of those branches. Need we wonder, therefore, that so many pupils become discouraged with such a course, lose interest in their studies, and leave school at a time when they ought to do their best work.

This may be remedied by following a general outline, of work that will make each successive step a new one

and every term more interesting as the pupil grows in mental power. Classes will advance only as they are able to comprehend and review only to fix in the mind what has once been thoroughly mastered.

The graded system does not, as some may suppose, interfere with the originality of the teacher, nor does it tend to make school work mechanical or routine. The tendencies are entirely in the opposite direction. We need to teach less textbook, and develop more thought-power, and this can be done only by limiting the amount of textbook study, by confining each grade of pupils to certain subjects and lines of work within their grasp, and allowing the teacher the widest possible latitude and the longest possible time to expand, illustrate, and apply the principles involved. In this way the teacher is not only permitted, but required to supplement textbook work with his own knowledge, skill, and teaching power. A general course of study may be arranged for all ungraded schools, and this course, with the necessary regulations and suggestions, in the hands of an earnest, progressive teacher, may be successfully applied in any school.

UNGRADED SCHOOL WORK.—A FEW RESULTS.

BY KATE L. BROWN.

IT may not be out of place to inquire what are the results of good work in a well ordered country school? To the child, first of all, comes a certain sturdiness and self-reliance too often absent in a well-graded school. Do we realize that it is only that which the pupil can do unaided, that is of the highest benefit to him? A fault with the ordinary teacher is that she helps pupils too much. Let them be tested by another, and a disagreeable surprise follows. The children are discouraged, and the teacher says to herself, "Why, I was sure they knew that."

Much of this failure comes from the almost constant supervision a graded school entails. The children realize that the teacher is there to assist them at any moment, and when the difficulty comes, they are more ready to appeal to her, than to gain the knowledge for themselves.

In the ungraded school, the child is thrown upon his own resources. The teacher has almost no leisure, and cannot be appealed to at any moment, and this necessitates better attention from the pupils in class time. Then from being obliged to work alone during study periods the habits of application and self-help are inculcated.

But a nobler quality even than self-reliance may be developed. In the relations between the older and younger pupils there may exist that chivalrous spirit, that exquisite consideration that marks the true family.

The teacher should never feel satisfied until she has awakened the true spirit in her pupils. It may perhaps be best done by being tender and motherly toward these little ones. Their small rights and privileges must be

insisted upon as rigidly as if they were the older rather than the younger members of the little community. Their work must be as carefully planned as the Geography and History, and never sacrificed for the older classes. We have seen schools where the importance of the younger members was reduced perilously near zero. The little fingers were allowed to try to manage bits of broken pencils, while the older children received long ones, well sharpened. They were allowed to sit idle for long periods of time; in the entries they must take unpleasant corners; and on the school grounds they were driven from the most advantageous playing places. Is it any wonder that there was continual conflict, and that the little ones were tormented on the road daily?

Across the gulf of the hurrying years comes the memory of one little brown school-house. It was two and one-half miles from the village, with few houses in sight. It overlooked a fertile plain dotted with pleasant farms. Its horizon was bounded by craggy ledges, where the maples blushed in the autumn, or tossed their gold recklessly down on the heads of the loitering children.

It formed an arena of problems,—this ungraded school. There were too many classes, and too wide a range of work was attempted. All the stimulating influence many of the children received came from the school, and the teacher felt sadly the gap between her ideals and what was actually accomplished. But one sweet and unspoiled memory remains—the tenderness of the older children for the younger. Whenever a little one entered it was given at once to some older pupil as her "child," and she became responsible for the comfort of the little one.

This attendance was not required on the road, but often given. More than one grateful mother had reason to bless the kindness of the older boy or girl, that won home without accident little feet so apt to loiter on the long country roads. A great sympathy existed between the older and younger children in matters of work. And the older pupils watched their "children," keenly interested as to who should win the "Perfect."

Then, too, the relations of teachers and pupils may become exceptionally close and helpful. Surely, here is your great opportunity, teachers of ungraded schools. If you are strong and noble, and day by day exert your highest influence, every boy and girl going from you may bear the stamp of your ideal. And the intellectual results need not be insignificant. Your pupils may read well and love good reading; they may write and spell fairly, and express themselves in good English; they may understand the principles of the simpler mathematics and compute readily and accurately; and to this knowledge may be added much from life that geography and history will bring.

The woods, streams, and pastures give the material for an endless study in natural science. If the teacher will only realize and take advantage, will encourage her pupils to study and observe, to make collections of minerals and

wild flowers, a great source of delight will be brought into their lives.

Is the situation discouraging, dear teacher of the ungraded school? Remember that noblest old legend of Jacob wrestling until the dawn with the unseen Power. "I will not let thee go, except thou bless me," was the challenge of the sturdy son of the soil.

So too, let us grasp *our* problem, and with hearts full of undying hopefulness vow,—

"I will not let thee go except thou bless me."

ZACHARY'S FIRST YEAR IN SCHOOL.—(II.).

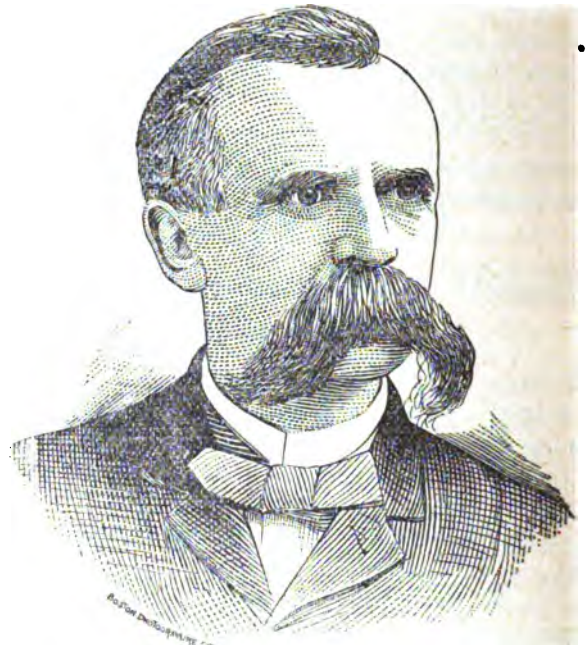
BY SARAH L. ARNOLD.

THOSE September days were filled with marvelous things, Zachary thought. He had much to tell his mother every day when he came from school. She was a wise little mother, truly, who knew how to rejoice with him in all his child experiences and new discoveries. She forgot to think them little or unimportant. The new friends he found in his play, or met in his going or coming, were her friends, too. She knew them all, and made her broad piazza and shady lawn a playground, where they were always welcome. "How can you bother to have the noise of so many children about?" the neighbors asked. "The noise does not bother, while the children are happy," was the reply; "and I like to know what they are doing." She was wise enough to know that the little Zachary needed her in his play, and that to have him quiet was not the only consideration. She always found time to have a quiet little talk with him at twilight, before bedtime came. Then the little lad crept into her lap, and told her, unafraid, about the day's happenings,—what Johnny Barnes had said to him as they played; how Miss Soule taught them delightful games at recess, and stayed with them all the time; how Jimmy Gallagher "went barefoot," and said it was better fun than to wear shoes. Could he go barefoot sometime, too? And Miss Soule wished him to pass the pencils every morning, so he must surely get to school in time. "She says she needs me to help her," he explained. "I often do things like that. And then Miss Soule sends me into the field for flowers when she needs them, too. And, mamma, I often read with the A class when I have written my slate full of words."

From all these evening talks the mother gathers confidence, and comes to believe that her little boy is wisely cared for, after all. She smiles at the recital of Miss Soule's many wants, knowing how the nervous little hands must need the added occupation, and the restless little body the change and quiet found in the fields. The teacher does understand Zachary, spite of her misgivings, she thinks. Her feeling is strengthened by the courteous notes which she receives in reply to her own concerning Zachary's school life. The teacher evidently remembers the parent's

rights and interests, and accepts her judgment in matters where the home life touches the school life. The tardiness which was unavoidable was promptly and cheerfully excused. The note which explained that Zachary was not well, and needed to be kept from draughts for a few days, although he felt able to remain in school, brought a prompt assurance that the child should receive special care while his need remained.

Before long the mother found herself regarding her child's teacher as a friend, who showed her interest in the lad, and in whose care she might leave him with confidence. All that Zachary said of his teacher showed her to be gentle, thoughtful, and firm. When the children played



Supt. W. B. POWELL, Washington, D. C.

school, and one after another impersonated the teacher, there were no harsh words spoken, no threats made, no sharp directions given. "Will you please to pass the pencils for me, while I am so busy?" Zachary asks gently, when he "plays teacher." "John, your slate is very neat," he remarks to one of his make-believe pupils. "Will you help George to clean the erasers, please?" "I am sorry we are not more quiet this morning. Let us fold our hands and think a minute about it quietly. Can we teach our pencils to be still?"

These mimic schools are a revelation to the mother. She hears no "musts" or "mustn'ts." Has the teacher learned to do without them? And where are the letters? She hears no word of them; nor does Zachary seem to spell. But he tells her of reading stories about the cat, or the golden-rod, and often alludes to a "chart" in which she is much interested. Then Zachary has much to say of the beautiful stories which Miss Soule tells to them before dismissal,—stories of the wonderful winged

horse; of the king with the golden touch; of the child who saved the country from the tide. He can tell the stories to his mother. She listens, and is glad. Really, the school must be a good place. She will go to see for herself, and to meet the new teacher.

Zachary walks proudly beside his mother, this afternoon, when she visits the school. He wonders if the boys and girls all know that she is his mother. How they all must want her for their own, she is so good! He is eager to lead her to Miss Soule, and he introduces her with dignity.

The teacher is courteous and cordial. Her visitor feels the truth in her simple greeting, and is interested in the slates which Miss Soule leaves for her delectation, saying, as she excuses herself, "The children need me now."

The mother is left alone in the pleasant schoolroom and marvels to find it so pleasant. Bright pictures hang on the walls, colored borders are drawn upon all the boards. Large vases of flowers and of autumn leaves stand in the corners or on the tables. There are mottoes written upon the board, for the teacher's sake, the visitor fancies, for surely the children of Zachary's age cannot read such difficult words, nor do they need the counsel or the comfort.

"A heart at leisure from itself
To soothe and sympathize."

"Every day is a fresh beginning."

"Change to music every jarring sound."

These the mother reads, as she glances about the room. Upon the teacher's desk, by a vase of flowers, stands a card with the "Inasmuch" verse upon it. There can be little doubt that the children are in good hands with such a motive in the teacher's work, the visitor thinks, feeling more and more at her ease regarding little Zachary.

Now the children are coming in, their bright faces filling the room with sunshine. Zachary is walking erect, with the dignity of a captain. The long line passes about the room, walking quietly. Then the children run on tiptoe, then skip, then walk again. "Just to make an easy change from the play to the schoolroom work," Miss Soule explains. When the children are seated the young voices are lifted in song,—a morning hymn, first, sweet and reverent; then

"Sweet and low, sweet and low,
Wind of the western sea,"

chime the baby voices. Then another lullaby, until the very atmosphere about the little ones echoes gentleness and love. There is a quiet signal from the teacher, and the slates are taken, the little fingers grasp the pencils, and every child is at work.

The mother speaks her surprise that so many can work together so quietly. "We have been trying to learn that," Miss Soule replies. "We know that we cannot be noisy without disturbing others, and so we try very hard to be quiet. The children knew, too, just what they were to do at this period, and they are trying to do it without questions, as if they were little men and women. I want

them to learn self-help, and so we tried to begin at the beginning."

Miss Soule dropped her pencil, as she was talking. A little lad hurried to hand it to her, pleased by her smile and "Thank you," and speaking a polite "Excuse me," as he passed their guest. The teacher gave her directions to the children as if they, too, were guests. She looked at the slates which held the little sentences they had written, and gave gentle cautions or quiet words of approval as she laid them down. Then, standing before them, she gave a few rapid directions which sent the little hands flying in graceful movements up and down, and from side to side, and which left the little people quiet and rested again, ready for new work.

"They know where the work can be found," Miss Soule says to her visitor. One class copies words on slates, a second works with splints, and the third, Zachary's class, is on the floor, ready for a lesson. Even here the mother listens in vain for the schoolroom tone. Zachary talks as easily and freely as when at home. Her heart beats with pride as he reads from the board, where the teacher writes rapidly. The little people are very eager. Work goes as happily as play, it seems. And now the mystery is solved. The children do not need to learn the alphabet in these days, the teacher tells her. And she carefully and simply explains to the mother what her "method" has been.

There are other exercises with other classes, a song, and a moment's gymnastics, then the little people sit with folded hands, ready to talk about the flowers which the teacher places upon their desks. The mother can hardly believe her eyes. "Botany in the baby class!" she thinks. But little Zachary shows her how it is done. He stands by his desk, holding a belated clover in his hand, and his clear young voice is saying.

"This clover grew beside the road, where we found it on our way to school. It has roots, stems, leaves, buds, and blossoms. The roots grow in the earth, where they find food for the plant. They look like little brown threads. The stems are round and green, and I can easily bend them. The leaves have long petioles [Zachary rolls the word as if it were a sweet morsel, he is so proud to tell his mother about it], and the blades are in three parts. Sometimes we find four-leaved clovers, for luck. The little flowers grow together in a round head. Bees like them, they are so sweet."

The mother rejoices at the sweet earnestness and evident enjoyment with which her boy speaks. One child after another follows, each telling about his flower. The golden-rod, aster, gentian, and "ear-drop," with a late dandelion, have all become the children's friends. They recite together, "Flower in the crannied wall" and "Kind hearts are the gardens." Then there is a flower song, and before the mother has guessed how the time is passing, the good night is being spoken, and the children are ready to go.

She watches Miss Soule as she stands in the hall, speaking a gentle word here, replying to a final good-night there, finding stray hats, and untying obstinate knots in hat strings,

"Bless her kind heart and sweet ways," she says to herself. "I need not worry about Zachary any longer. I could not care for him half so well myself."

Miss Soule has time to stay and talk with her visitor, while a few children remain to help. The mother finds that the teacher has studied her children, and is learning their needs; that she is working to prevent bad habits and to establish good ones; that her ideals are high and her purpose strong and good. As she turns to go she says, "We mothers owe much to you, Miss Soule. You are doing a beautiful work for our children." The face of the young teacher flushes, and the quick tears come. How grateful she is for the sincere words. They will help in many a hard place. She goes home with a glad heart, watching little Zachary and his mother till they are hidden from sight by the bend in the road.

REFORMATION NEEDED.

BY GEORGE W. COLBORN, DAKOTA.

THE art of questioning should be carefully studied. Teachers who follow the textbook of to-day will do the talking, when the object should be to let the pupils do the greater part. This is lamentably the case in geography and history. Often the teacher's question of six, eight, or ten words is answered by one word from the pupil. This begets a pumping process which the teacher must resort to on all long answers. I have steered clear of this process by requiring them to prepare and deliver in detail before their class an assigned topic.

A Harvard graduate in one of our Western schools, who was not successful in teaching history, one day questioned his class, — "Why do we not accomplish more? Is the fault mine, or is it yours?" A clever young man, said, "I think you do too much talking."

I think if we ask ourselves the same question about any recitation which does not come up to our ideal, we shall find a similar answer applicable. We must throw the pumping machine aside, and become listeners and critics; we must insist upon our pupils doing the reciting if we wish for success. Once our classes find that they are expected to stand alone and give a recitation in every detail, they will prepare themselves for the task, and become better men and women for having been made dependent upon their own resources.

The calls for eight papers beginning Oct. 3 have exhausted our supply. We must ask our friends to be patient with us. We will send the eight papers beginning Oct. 24, and will also send a leaflet with the "Fifty Good Books" reprinted.



THE HOUSE WE LIVE IN.

BY MARY L. SAWYER, BOXFORD, MASS.

ALL children know the names of the different parts of the houses where they live; you would think it very funny not to know a glass window from a wooden door. You know, too, the different papers on the walls, the carpets on the floors, and you would at once recognize these papers and carpets if you should see them in other houses, or even in distant towns.

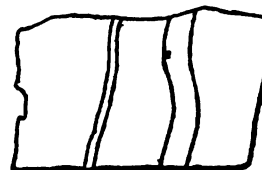
How many know what the great house we all live in, and which we call the earth, is made of?

This great stone house is papered and carpeted with beautiful grass, and flowers, and grain, and trees. You know the names of many of the trees and flowers. Now just as you can take away the carpets and the paper in your houses and come to the floors and walls, so if you take away the trees and the plants, and the soil in which they grow,—that is, the earth carpet,—you would find the solid rock,—that is, the earth floors and walls. But, you say, you cannot take away these earth carpets. No, but some of the earth floors are not carpeted, and almost everywhere you can find stones, which are broken pieces of the earth's floor.



We say these rocky pieces are made of different *minerals*, and every mineral has its own name. Let us learn one to-day. Here is a little roundish white stone, as white as milk and as smooth as silk. It is a little quartz pebble.

Here is a rough bit of rock that seems to be a broken piece of a large one. Running through it is a white stripe, looking very much like the white pebble. It is the very same mineral,—quartz. Here is a very different looking stone. You might easily take it for a piece of ice. Held it before your eyes; you can see through it just as you can through glass. Quartz again!



Prettiest of all is this cluster of shining stones, transparent like the last piece, but all of regular shape. Each little pillar has six sides, and the little pyramids on top of the pillars have each six sides. These six-sided pillars are called quartz crystals. Sometimes they are milky white, sometimes purple, sometimes smoky brown. Often they are so small and

crowded so closely that you can hardly see their shape, but if you look closely,—you children have such sharp eyes,—you can still count the six sides.

If you go down to the seashore and walk along the sandy beach you will be walking on one of the uncarpeted floors of our house, and there you will find quartz everywhere; for the sand in which you like to play is almost wholly made of little grains of quartz. Many of the pebbles that lie there so thickly are all quartz, too. Besides the shining white ones, there are black and gray and brown, for quartz has many colors. How, then, are you to know it?

First, because it is so hard, the very hardest of our common minerals. Try and scratch a piece of quartz with a knife or file. You cannot make the least little mark upon it, but if you try hard enough the quartz will cut into your knife. It will scratch glass, too. Now strike this large quartz rock with a hammer. It does not break, but see how the sparks of fire fly out. If you succeed in chipping off a little, it does not break in any particular form, but in irregular pieces, and it is as easy to break it in one direction as in another. Some stones split in regular pieces, but quartz never does.



Sometimes you will find veins of quartz running through a ledge of rock, and perhaps in this quartz there will be little pockets with crystals hanging in them like tiny icicles. Count the sides and scratch them with a knife, to see what kind of crystals they are.

Before our next talk I want you to find as many kinds of quartz as possible. There is a beautiful pink kind called rose quartz. The brilliant agates and carnelians and bloodstones, the onyx, and some of the amethysts that people wear for rings or seals, are all quartz stones.

And if any of you should find a round, rough-looking stone that, broken open, would be hollow, thickly lined with shining crystals, you would be one of the luckiest seekers, for you would have a real quartz geode.



LANGUAGE.—(I.)

BY MARY A. SPEAR, PENNSYLVANIA.

The First Year.

THE purpose of the early language lessons is to train the children to think and to express their thoughts in complete sentences. There are many composition phrases or idioms used in the First Readers of which the pupils should have a knowledge, so as to speak them promptly and fluently, thus gaining a help toward rapid progress in reading. These idioms may be introduced in the first language exercises.

First: The teacher begins the lesson by saying to the little people gathered around her, "I see a box. I see a chair. What do you see?" addressing some one whom she knows is not timorous or afraid to speak, and from whom she expects a reply. Probably the child will respond, "I see a ———," mentioning some object near him, and each pupil, as the question is asked, will preface the name of some object by the words, "I see." This plan leads the pupils in the earliest language lessons to make complete sentences. At the next lesson the teacher begins by using another form of expression. Holding a pencil in her hand, she says, "This is a pencil. You may take something and tell me what it is." At the next lesson this mode of speech is varied with the first used, and perhaps another form is introduced. The different idioms given are repeated until the pupils speak them readily and easily.

Second: The teacher soon begins to give variety to the exercises by asking, "Where is the pencil?" The pupil replies, using some of the forms he has learned. "Here is the pencil." "This is the leaf." "There is a flower." "I have a feather." Likewise a pupil may become a questioner. He requires an answer from one of his classmates or from the teacher. When the teacher answers, she finds opportunities for introducing new words or new forms of speech. These are quickly noticed by the pupils, and imitated.

Third: The next step is to have the pupils discover the same quality in different objects. Take for example the attribute of color; the language lesson can then be made a lesson on color, thus unifying the work. Having shown the color red, and keeping it in sight of the pupil, so that comparisons may be made, ask him to look about and find something of that color. He sees a piece of red paper. When making known his discovery he should not be allowed to merely touch or point to the object; neither should he be allowed to use but one or two words, as, "paper," or "this paper," but in every instance he should be required to make a complete sentence, as, "This paper is red." "Here is a red block." "I have a piece of red ribbon."

In a schoolroom one may find red paper; red lines on white paper; red edges on the leaves of a book; a red pencil; red flowers; a red dress; a red ribbon; a red crayon; red in colored pictures; red in decorations, and in many other things which might be overlooked in a hasty glance. At first children will observe only a few things which have this color attribute. They must not be satisfied with these few easily discovered objects, but led to make more diligent search, so as to form a habit of careful and painstaking investigation. This habit will be an advantage to them in future work.

To encourage this exhaustive study of objects the teacher may, when the pupils think they have named everything, say, "There is one thing which no one has yet seen. Who will be first to find it?" or, "Is there

not one thing you have not mentioned?" Often the pupils will discover more than the teacher. After a similar plan the pupils will learn other attributes. Their attention must be directed to the size, form, material of the object, and to those qualities that are ascertained through the sense of touch, as smooth, rough, hard, soft.

Fourth: The interrogative form of the sentence is next used, introducing the qualifying word. The questions are first asked by the teacher and answered by the pupils, then asked by a pupil and answered by the teacher or a classmate. "Where is the red box?" "Who has a long pencil?" "Which is the rough board?"

Fifth: Lead the pupils to make statements about more than one object, so that they will be obliged to use the plural form of the verb. Give special attention to the uses of the verbs, *to be*, *to have*, and others which are frequently misused. "How many eyes have you, Alice?" "How many has Edith?" "How many have both?" "Tell me the color of this ball." "Of this paper." "Tell the color of both." The ball is blue. The paper is blue. The ball and the paper are blue.

Exercises like these should not be lifeless or mechanical, but the pupil must be aroused so that there is mental activity, then he will receive stronger impressions concerning the right form of speech than he would if the correct forms were given to be learned as a memory exercise. This is especially true of those pupils whose minds are sluggish or dull.

Sixth: Place objects in different positions with reference to one another, in order that some words of place and relation may be taught. "Tell me some things which are *on* the table." "What child is standing *near* me?" "Tell some things which are *above* you." "What is *under* your feet?" "How many chairs between the table and the window?" "How many nuts are in the box?"

LESSONS IN ZOOLOGY.*

BY OLARABEL GILMAN, JAMAICA PLAIN, MASS.

Corals.

A single large specimen of *Galaxea* (Fig. 1) or some other coral with large tubes, will furnish every child in a class with a tube for study, while the teacher should have a piece consisting of three or



FIG. 1.

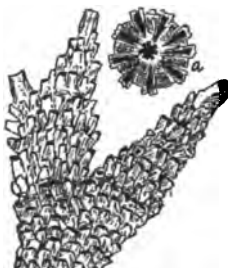


FIG. 2.

four tubes, and if possible, one or two smaller ones just budding out. Though *Galaxea* is best, still no teacher need omit the lesson,

* Copyright, 1899.

if she can obtain pieces of the common madrepora or finger-coral (Fig. 2). But if this is used, each child should have the end of a branch showing the large polyp at the tip, and a group of little ones around it. A living sea-anemone in the schoolroom will be a great help. Blackboard drawings of budding hydras should also be kept for this lesson.

The children have become familiar with the idea of the skeleton in the sponge, so they at once see that coral is only the skeleton of the coral animal, and that each tube is made by one animal. They quickly make the following observations:

It is white. It is shaped like a tube. It has lines on the outside. It has little walls on the inside. It is hard like stone.

The teacher tells them that this is a stony coral, with a skeleton made of lime. Then they look carefully at the top and the sides of the skeleton, to see if it will remind them of any animal they have studied, and find it is like the sea-anemone.

Some pieces of *Galaxea* will show plainly that there are twelve stony partitions that nearly meet in the center of the tube, and twelve more that are shorter, but the specimens are often so broken that it is difficult to tell how many of the partitions are long and how many are short. It is not best to have the children count them unless the teacher knows from personal examination of the tubes, that her pupils can readily see how many little walls of each sort there are.

After the question, How are these tubes held together? an examination of the teacher's large specimen shows that a stony, white, spongy substance connects them.

Fig. 3 has been put on the blackboard, drawn wholly in red, because it shows only the fleshy parts of the coral. This is not the



FIG. 3.

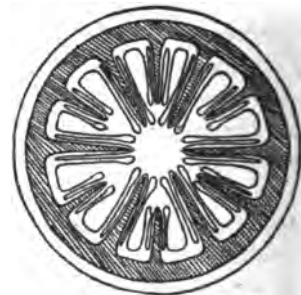


FIG. 4.

Galaxea, but it has the same kind of a stony skeleton, and the same arrangement of the fleshy parts. The children now describe this figure.

This new coral has a fleshy tube. It has a disk at the top of the tube, with the mouth in the center. It has tentacles around the mouth. There are little animals budding from some of the tubes. There is flesh covering the stony skeleton between the tubes.

It is easy now to understand that the spongy filling between the tubes of *Galaxea* is formed by the layer of flesh that covers it, and connects the animals. A colony of *Galaxea* is formed by the budding of young animals from this connecting layer, around the base of the old ones.

Fig. 4 is a cross section of the body of a living coral, but does not show the stomach. It represents what we should see if we were to

cut off the upper half of the tube and then look down upon what was left. For the blackboard the unshaded parts should be drawn in red, to represent flesh, and the shaded parts in white, for the stony skeleton. The children now tell what they see in this figure:

There's a tube of flesh outside of the tube of stone. There are fleshy partitions and stony ones. The fleshy partitions are in pairs, and the stony ones are not. There are six pairs of long fleshy partitions, and six pairs of short ones. There are six long stony partitions and six short ones. There is a tube of flesh inside the stony tube, and the fleshy partitions grow out from that.

The stony partitions are not formed by the fleshy ones, but each by the thin layer of flesh covering it, represented by the light line in the figure.

FIRST STEPS IN LANGUAGE DEVELOPMENT.*

BY HARRIET A. LUDDINGTON,

Principal of Training School, Pawtucket, R. I.; Author of "Picture Problems."

III.—The First Conversations: Story Telling.

The difficulty of starting the first conversations with the little beginners in school life, is appreciated fully by every primary teacher, unless she is so fortunate as to teach children who have been in a good kindergarten. The child's inability to talk in the first few days of his school-life, results generally from timidity. Outside of the schoolroom he most vigorously exhibits his power of conversation. The only way to secure a like freedom in the school-room, is to restore, as far as possible, the conditions which exist outside. Four most important conditions are: occupation, freedom of bodily movement, exercises which irresistibly attract the attention, and a sunny and home-like atmosphere. *Something to do* at once, will soon make the little one forget that he is a stranger. This "something" must be simple enough for the child's slender abilities. It may be laying colored sticks, building with blocks, assorting colored worsteds or papers, pasting rings, making objects in clay, or drawing straight "soldiers," (lines), on ruled paper,—having the soldiers' heads and feet touch the lines. A little of this work may be followed by a kindergarten game, a run around the schoolroom softly on the balls of the feet, or a vigorous mimic snow-balling game. These little physical exercises prepare the way for that delight of childish hearts,—a story. This, to attract the eye, thereby fixing the attention, should be illustrated. For this purpose the goniograph† or jointed slat, building blocks, pictures or sketches, may all be used.

The most enjoyable stories for young children are fairy tales or myths, out of which many fairy tales grew, stories from the *world's childhood* having a wonderful fascination for the child living in the world's *later ages*.

(*Copyright, 1890.)

†The goniograph is composed of a number of thin, flat pieces of wood, fastened end to end in hinge joints, in such a way that all of the pieces can fold one upon another. It is invaluable for "Form Lessons," as well as in story work. Kindergarten children call it "The Fairy." It can be obtained of any dealer in Kindergarten supplies.

We may, for instance, tell that curious Esquimaux myth about the sun and moon, which is related in Olodd's "Childhood of the World."

This myth relates that when a girl was at a party, some one told his love for her by shaking her shoulders after the manner of the country. She could not see who it was in the dark hut, so she smeared her hand with soot; and when he came back she blackened his cheek with her hand. When a light was brought, she saw that it was her brother, and fled. He ran after her, and followed her as she came to the end of the earth and sprang out into the sky. There she became the sun, and he, the moon; and this is why the moon is sometimes dark as he turns his blackened cheek towards the earth. Perhaps the little ones would be quite as much interested in the tale of Jack and Jill,—from the Icelandic mythology,—which is given as follows in Fiske's "Myths and Myth-Makers."

"Jack and Jill were two children whom the moon once kidnapped and carried up to heaven. They had been drawing water in a bucket which they carried by means of a pole across their shoulders, and in this attitude they have stood to the present day, in the moon. They fall away one after the other, as the moon wanes, and their water-pail symbolizes the supposed connection of the moon with rainstorms."

Either of these stories, or any other good moon-myth or sun-myth, will lead at once to the children's observations of those heavenly bodies, and at the same time will arouse the desire to make further observations.

The illustrations of the Esquimaux myth might be sketches or pictures of the *Igloo* or Esquimaux house; the boy and girl in their peculiar dress; the curious lamp or stove from which soot could be procured; the sun; the moon with the dark shadows upon it, as so often observed by the children, etc.

The myth of Jack and Jill gave great delight to a company of little folks, when the teacher sketched rapidly on the blackboard the figures of a boy and girl carrying a pail of water, and then the outline of the moon, showing upon its surface a representation of a boy and girl holding a pail between them.

A good exercise to follow such stories as those mentioned above would be reciting with the teacher a part of "Seven Times One,"—"O, Moon! in the night I've seen you sailing,"—or, singing the kindergarten song, "Lady Moon! Lady Moon! sailing so high." The latter would, of course, cause the children to remark upon the fact that the Esquimaux myth calls the moon a boy, while the song speaks of it as a lady. The poem would call forth further comparisons between the beliefs of the Esquimaux and our own ideas. In both cases there would be an opportunity for a little literature and history lesson, while considerable curiosity would be aroused concerning the strange people and their queer beliefs. Thus from a simple story may grow lessons in elementary geography,

history, and literature. At the same time, as the result of the intense interest aroused, the children are led to express their thoughts with the greatest freedom, thus aiding the teacher in her discovery of their mental powers.

The manner of telling the story is of almost as great importance as the tale itself. It should be told in a bright, dramatic, animated manner, with the addition of the little air of mystery which so fascinates children. A teacher who stands and tells a story in a solemn or prosaic style, need not hope to see any interest on the part of the little ones. If some of the characters in the story are children, their dress and appearance should be described, comparing these constantly with the dress and appearance of the pupils. In this way the tale is made *real* to the children, they feel that they almost belong in the story themselves; they, for the time being, *live* the incidents described. A pleasing story, *told*, not read, in an interesting and vivacious manner, is the "Open Sesame" to many a little one's heart, and, very often opens the portals of speech, too,—the child so entering into the spirit of the tale as to forget his surroundings and consequent timidity, unconsciously expressing with the utmost freedom the thoughts awakened by the narrative.

KEY TO RECREATION IN GEOGRAPHY.

[See issue of October.]

Rainy. ¹	Mosquito. ²⁶	Lincoln. ⁵¹
May. ²	Wrath. ²⁷	Toulouse. ⁵²
Black. ³	Madison. ²⁸	Charles. ⁵³
Skye. ⁴	Gila. ²⁹	Ha, ha! ⁵⁴
Foulweather. ⁵	Mosquito. ³⁰	Grand Tongue. ⁵⁵
Whitehall. ⁶	Florence. ³¹	Duck. ⁵⁶
Greenfield. ⁷	Seilly. ³²	Bologna. ⁵⁷
The Woods. ⁸	Race. ³³	Banca. ⁵⁸
Wetter. ⁹	Lewis. ³⁴	Snow. ⁵⁹
Inn. ¹⁰	Jackson. ³⁵	Milk. ⁶⁰
Henrietta Maria. ¹¹	Leeds. ³⁶	Icy. ⁶¹
Nelson. ¹²	Brest. ³⁷	May. ⁶²
Copenhagen. ¹³	Hungary. ³⁸	Brown. ⁶³
Red. ¹⁴	Great Bear. ³⁹	Harrison. ⁶⁴
Hungary. ¹⁵	Washington. ⁴⁰	White. ⁶⁵
Mosquito. ¹⁶	Austin. ⁴¹	Peel. ⁶⁶
Berne. ¹⁷	Hayes. ⁴²	Orange. ⁶⁷
Florence. ¹⁸	Negro. ⁴³	Philippine. ⁶⁸
Madison. ¹⁹	Conception. ⁴⁴	Flattery. ⁶⁹
Nice. ²⁰	Pekin. ⁴⁵	Pleasant. ⁷⁰
James. ²¹	Sandwich. ⁴⁶	Oder. ⁷¹
Darling. ²²	Clear. ⁴⁷	Cologne. ⁷²
Salt. ²³	Blue. ⁴⁸	Deer. ⁷³
Iser. ²⁴	Eider. ⁴⁹	Home. ⁷⁴
Mosquito. ²⁵	Lincoln. ⁵⁰	Long. ⁷⁵

ANSWERS TO LITERARY CONUNDRUMS.

[See issue of October.]

- | | | | |
|-------------|-------------|--------------|---------------|
| 1. Chaucer. | 5. Holmes. | 8. Burns. | 11. Shelley. |
| 2. Dryden. | 6. Holland. | 9. Abbott. | 12. Coolidge. |
| 3. Pope. | 7. Hood. | 10. Southey. | 13. Young. |
| 4. Taylor. | | | |

Helen M. Collier and Grace E. Walton, Belfast, Me., and others.



THE CHILDREN AND THE POETS.

ARRANGED BY KATE L. BROWN.

ADELINE D. T. WHITNEY.*



Larva.

Y little maiden of four years old,—
No myth, but a genuine child is she,
With her bronze-brown eyes and her curls of gold,—
Came quite in disgust, one day to me.

Rubbing her shoulder with rosy palm
(As the loathsome touch seemed yet to thrill her,)
She cried,—“Oh, mother, I found on my arm
A horrible, crawling caterpillar.”

And with mischievous smile she could scarcely smother,
Yet a look in its daring, half-awed and shy,
She added “While they were about it, mother,
I wish they’d just finished the butterfly.”

They were words to the thoughts of the soul, that turn
From the coarser form of a partial growth,
Reproaching the Infinite Patience that yearns
With an unknown glory to crown them both.

Ah, look thou largely with lenient eyes,
On whatso beside thee may creep and cling,

*Arrangements have been made with Messrs. Houghton, Mifflin, & Company for the use of this poem and portrait.

For the possible beauty that underlies
The passing phase of the meanest thing.

What if God's great angels, whose waiting love
Beholdeth our pitiful life below,
From the holy height of their heaven above,
Couldn't bear with the worm till the wings should grow.

For the children.

In the lovely old hill-town of Milton, Mass., is a pleasant brown house known as "Elm Corner," the home of Mrs. A. D. T. Whitney, the author of "Faith Gartney," "We Girls," "A Summer in Leslie Goldthwaite's Life," and several other books beloved of girls.

Mrs. Whitney, though past middle life, is very like her picture, and her own character and her surroundings are very like her books. In these respects she is the least disappointing of authors. She has the sweetest of faces, clear, grave eyes that look kindly at one, while they still seem to read one through and through, and a gracious cordiality that puts the shyest person entirely at ease.

Mrs. Whitney in 1861 published "Boys at Chequasset," an earnest little story, in which the author's aim is to show how a little manliness on the part of one boy influenced for good his whole circle.

"Bird-Talk" is another book for children, while the old magazine "Our Young Folks," "Wide Awake," and other children's magazines have had the benefit of her stories. Mrs. Whitney has been a semi-invalid for the past few years, and lives quietly in her lovely home, interested in her friends, her letters, and the flock of bright grandchildren growing about her.

For the teacher.

Children have many thoughts, and begin to ponder very early on the problems of existence. They need guidance here, for new experiences multiply so rapidly that the little heart is confused—almost appalled by the flood of novel life. And in no sense may we help children more, than by introducing them to that which develops and ennobles. By giving a child that which will help him control the new life, we show not only sympathy, but respect—two elements wherein lie the secret of all influence. The poem "Larvae" is a happy illustration of the natural flowering out into the spiritual, and it teaches a lesson of toleration that cannot be too early impressed. First call the attention of the children to the partial forms of growth, as in the cases of the butterfly and dragon-fly. The poem read teaches its own lesson. We, compared with the angels, are as the caterpillar compared with the butterfly. If the Lord can be patient with us, should we slight or scorn anything "creeping or crawling"?

Illustrate the meanings of such passages as,—

"Ah, look thou largely," etc.
"The passing phase," etc.

Such a poem cannot fail to influence children. They will feel its largeness, even if they cannot analyze the impression. And the best of teaching is apt to be the indirect and the unconscious.

"BUGS AND THINGS;"

OR,

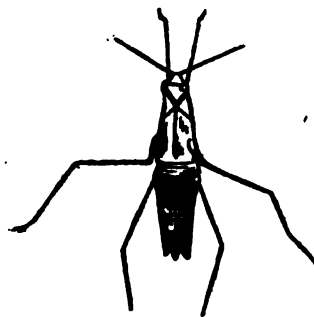
Fred and Ethel at the Brookside.*

I.—WATER SKATERS.

"COME, Ethel," said Fred, "come to the brook with me. I have a new dredger, and you may take my old one. We will look for water-skaters and tigers."

"Oh, that will be nice!" cried Ethel, and away she ran for her hat and a tin pail to put the "findings" in.

Do you know what a "dredger" is? Fred's was made of an old salt bag, and iron hoop sewed about the edge. It had a long handle fastened on to the hoop. Any one can make a dredger.



When they reached the brook, Ethel saw some curious little creatures, like spiders, skating rapidly over the surface of the water. It was funny to watch them. They had four very long, thin legs, two antennae, and a pair of short feelers near the antennae.

Ethel was tired with the walk under the hot sun. The little city girl was not as strong as her country cousin, Fred.

"You sit on this stone and rest, while I go up the brook to get some cress for mamma," he said.

So Ethel sat down to wait for her cousin. Did she feel sleepy from her long walk, or how could such strange things happen? One of the skaters stopped in his mad chase, and looked gravely at her.

"You're a pretty looking object," he said, politely. "Are you dead, that you sit there like that stone?" and the skater dashed across the brook and back again, to relieve his feelings.

Ethel, too much surprised, did not reply, but the speaker went on:

"Now, I am altogether lovely. See my four long, slender legs, and my ringed body. See the grace of my movements!" and the skater almost stood on his head for Ethel's benefit.

"You look, for all the world, like a grasshopper in a fit," said a little yellow ladybug, who was clinging to the stem of a water-plant.

"Ah! you there, madam?" cried the skater, "I am delighted,—charmed to see you."

Rush! snap! and alas for poor Mrs. Ladybug! She was gone forever.

* The writer is greatly indebted to *Up and Down the Brook*, published by Houghton, Mifflin & Co.

HABIT in thinking is one of the great ends to be attained through teaching.

DECEMBER SENTENCES.

BY GEORGIA A. HODSKINS, SPRINGFIELD, MASS.

[For blackboard work with little people. It is the work of a good teacher to select sentences that signify something. These teach many things that should be known.]

It grew very cold last night.

The wind blew hard and the river looked rough.

This morning the river is frozen.

The ice is not smooth.

All the trees are bare except the evergreens.

The birds and squirrels eat the pine seed now.

Ned and May said they heard strange noises last eve.

Grandma told them the frozen ground was cracking.

They saw cracks in the ice on the river this morning.

Hear the bells down the road.

A sleighing party is crossing.

The horses have on their winter coats.

Now is the time of the harvest.

Johnny says December ice keeps better than the later ice.

We made a snow fort this morning.

Mr. Woodpecker has dug himself a winter home in the trunk of the dead apple-tree.

It is pear-shaped and has a round door.

He will not let Mrs. Woodpecker into this nice house.

The old one will do for her;

The window-panes are covered with frost.

Tom and Dick have made a double-runner.

This morning we saw the tracks of the mice in the snow.

They travel by night.

See the little ridges where they ran under the snow.

The boys went skating last night.

Hear the hounds baying.

They have tracked a fox in the woods.

The children have made a slide in front of the house.

Grandpa heard tree-sparrows twittering in the swamp.

To day is the shortest day in the year.

See those bits of frozen apple on the snow.

The red squirrel has been hunting for apple-seeds.

The rabbits like the deep snow.

Now they can reach the tenderest shoots at the tops of the young maples.

See that flock of gold-finches.

They always fly in flocks.

The birds are often hungry now.

They come round the house for corn or crumbs.

The chickadees break the corn with their bills.

Hang a bone on a branch and watch the birds pick at it.

The snow buntings came with the last snow storm.

Fred caught some pickerel through the ice.

See our green holly, with its bright, red berries.

We will trim our houses with evergreen to-night.

To-morrow is Christmas Day.

Then we shall see what is in those big bundles.

COAL MINES.

BY HENRY S. KING.

WHILE there are few countries where coal is not found to some extent, the United States is particularly favored with both a large area of deposits and a superior quality of coal. The coal fields of the land cover an area about twenty-two times the size of Massachusetts, but all of the hard coal is found in Eastern Pennsylvania within an area not exceeding 470 square miles. The rest of the deposits are soft coal, and though this is inferior to hard coal in general utility, the supply is practically inexhaustible.

If we wish to know how our coal beds were formed we have only to go to them, for they tell their own story. Before the time of man, at the time of mammalia, the earth was covered with a dense rich vegetation which grew luxuriantly under the fostering influences of heat, dampness, and an atmosphere full of carbon. It was from this rank growth that our coal was formed. If a piece of wood is burned, and at the same time subjected to pressure, we

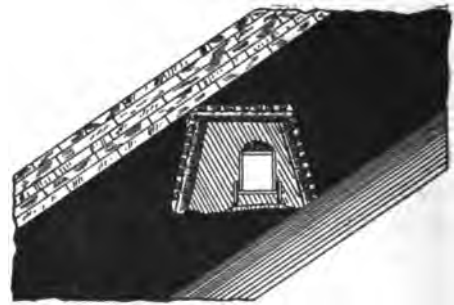


Fig. 1.

have a substance very like coal. If we watch a peat bed we can see the process of coal formation going on all the time. From such observations we find that coal is only the result of pressure and heat on the vegetable growth of the remote carboniferous age.

Coal is found in strata which are separated from one another by intervening layers of rock and fire-clay which were formerly the soil where grew the trees whose remains now form the coal. It is probable that each successive layer of coal was formed in some such way as this: The earth settling allowed the water to cover the vegetable growth until, by a gradual accumulation from the waves, land again appeared above the surface of the sea. This process was repeated as often as we find a stratum of coal, and continued through ages.

The pressure exerted on the coal strata caused them to assume irregular wave-like positions which approach the surface at points and dip away again. It is this slope which determines the way in which the coal shall be approached. There are four ways of entering a mine to take out the coal: the drift, the tunnel, the slope, and the shaft. In some places the seams are exposed to the surface, gener-

ally on some hillside or cliff, and it is for such locations that the drift (Fig. 1) is employed. An opening is marked on the exposed edge of the seam, and then a cut is made into the hill following the stratum in its upward course, that the water may run out and the loaded cars come easily to

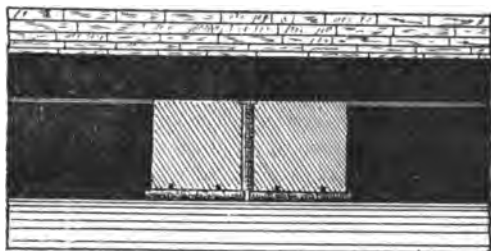


Fig. 2.

the opening. It is generally necessary to support the roof of the drift with timbers.

Next to the drift the tunnel is the easiest way to reach the coal. A tunnel is run into a hill at right angles to the seam. After the face of the coal is reached a passage is driven in either direction along the seam. The slope (Fig. 2) is very similar to the drift. It is a passage beginning at an outcrop of the seam and follows the course of the coal down the dip, the coal being drawn to the surface in carriages.

VARIETY WORK (PRIMARY).

BY LAURA F. ARMITAGE.

NAME three things boys and girls should not do.
Name something made of glass.

Write the names of three kinds of pie.

Name some things boys like to carry in their pockets.

Name something that has a long neck.

Name something that has a short tail.

Name some fruits you have seen growing.

What do you like to do Saturdays?

Tell three things that water is good for.

How old will you be your next birthday?

What do you learn to do at school?

Name some things that grow on vines.

Name some things that grow on trees.

Name some things that grow on bushes.

What is a very high hill called?

What are barns used for?

What grows on sheep?

With what do you mark on the blackboard?

Of what are boys' hats made?

For what are feathers used?

What do squirrels eat?

Name three things that can be seen from your school-room window.

Name two vegetables that grow in pods.

Of what is bread made?

Name two insects.

ODDS AND ENDS.

SEAT WORK.

BY CHARLES F. ERRETT.

MUCH time may be saved in ungraded schools by giving such examples as these:

I. In *addition*, have pupils add numbers,—three, four, or five at a time,—from a column written on the board.

II. In *subtraction*, require scholars to subtract a given number from another as many times as possible; or, having a column of figures on the board, let them subtract all the others from the first, it being the largest.

III. In *multiplication* and *division* such an example as this saves much time:

69843	} divided or	{ 63
76621		
83354		
	multiplied by	45
		79

This is a short way of writing nine examples.

WORDS NEVER TOO WELL KNOWN.

BY GUSSIE REINSTEIN.

exercise	exorcise.	sailor	sailer.
currant	current	levee	levy
formerly	formally	lesson	lessen
pendent	pendant	indict	indite
fisher	fissure	counsel	council
pistol	pistil	compliment	complement
patience	patience	cellar	seller
virtue	virtu	cereal	serial
surplus	surplice	canvas	canvass
profit	prophet	ascend	assent
gamble	gambol	altar	alter
cymbal	symbol	wreck	reck
carrot	caret	kernel	colonel
bridle	bridal	cruel	crewel
mustard	mustered	ceiling	sealing
muscle	mussel	cession	session
mettle	metal	burrow	borough
martial	marshal	augur	anger
weather	wether.	troop	troupe
sucker	succor.	thrown	throne

Pupil—What is this a picture of?

Teacher—You should not end a sentence with a preposition; you should say, "Of what is this a picture?"

Pupil—Thank you. I'll try to remember.

The next day the pupil comes to the teacher with several questions in the correct form.

Pupil—About what is this story?

Like whom does Uncle John look?

Under which tree were you standing?

There, didn't I remember? I should have said, "What is this story about?" "Whom does Uncle John look like?" "Which tree were you standing under?" if you hadn't corrected me.

Teacher—"I'm sorry you remembered."



ALLAN DALE will have charge of this Department, but the questions will be answered by a variety of teachers of various grades. We have been in the habit of answering such questions by personal letters, or sending them to teachers to answer, but hereafter they will be answered through the AMERICAN TEACHER.

What do you think of the plan to abolish recesses, and by means of a record of recitations give recesses of certain lengths to those having their lessons properly learned and to the teacher's satisfaction, these lengths to be counterbalanced by a record of misbehavior, charging, for instance, three minutes of this recess for each offence.

O. Z., Mishicot, Wis.

There is a wide difference of opinion upon the question of "No Recess." The best educators and most practical teachers are about equally divided upon it. Physicians very generally favor a recess, as do most parents, and all children where the "no recess" plan has not been tried. Principals quite generally favor it. So far as I know, it has been a success, and satisfied all parties wherever fairly tried. Your scheme is new to me, but promises the best of results.

Among my pupils in a country school is a boy fifteen years old who has already gained a disreputable notoriety for untruthfulness, cruelty, and lack of virtue. How can I benefit such a pupil? MISS L.

This is a hard case. He is so old that there is little probability that he will be reformed by the school. Two years earlier he would be easily reached, but even then the home must coöperate with the school. If there were but one of these traits it would be bad enough, but the three make it exceedingly difficult. The elements of character are radically different that cause untruthfulness, cruelty, and lack of virtue. Only heroic means will avail. He has passed the age of innocent untruthfulness, harmless cruelty, and they are probably chronic, while lack of virtue is premature, showing a rare depravity. He should certainly be removed from school and treated by an expert. It is probably unwise for you to speak to the parents, but possibly you may speak to the committee. You may save him if you talk to him plainly and show him how certain it is that unless he conquers himself he will early become a criminal and suffer the consequences. Show him that you can help him if he will help himself.

Should a pupil be held responsible for his actions while in a fit of anger. EDITH.

No, but he should be held responsible for being in a fit of anger. He must be dealt with judiciously. It may be a mere trick.

The question came up the other day, whether it is correct or not to teach children to pronounce the letter a with the broad sound, or as in the word für (ü). Is it ä man, or ä man?

A. B. S., New Hampshire.

This is one phase of the "newness" about which there is a deal of nonsense. It is of little consequence which sound the a has in this connection. The important thing is that it be spoken with the noun. The evil to be remedied was the old-fashioned habit of the child to connect it with the preceding word because it was well known, and then study out the next word after having spoken the a. "I see a—mouse." In that way it was always called ä. There will be no trouble if it is not spoken until the noun is. It should have the sound most natural to it, with the following word. There

is no gain if a child says, "I see ä—mouse," or "I see ä—mouse." If it stands alone, it is best as ä. Any attention to the a is mischievous, and it is as faulty to insist that it be ä or ä, as ä.

Please give, through your "Talks with Teachers," some light upon the following questions, which have perplexed me:

1. What can be done with a beginning-number class, who do good work during recitation hour, but when work is set them on the board to occupy their study hour, refuse to work unless coaxed and helped with each example when the teacher should be occupied with other classes?

2. Can pupils under seven and eight years of age understand, remember, and apply the terms used in the early study of drawing and form work, as usually begun with children?

3. Please give an estimate of the amount of work which a naturally bright class may be expected to cover in fifteen weeks, using an arithmetic which begins with notation and numeration, followed by addition, subtraction, multiplication, division, and fractions.

4. Is it not better that beginners use an arithmetic which includes greatest common divisor and least common multiple before taking up the subject of fractions? Is it best to use such a primary arithmetic as the one I have mentioned, and when they begin with an advanced book to go over the same subjects in their entirety again, as so many classes are doing? When a subject is mastered, I see no further need for the study of it.

C. E. T., Carthage, N. Y.

1. Such cases are difficult to reach by one who does not know the class. On no condition coax the pupils. In some way awaken an enthusiasm with a few of the class, paying a premium practically upon those who will work alone. I should put them into simpler work that I knew they could do, and see who gets through first.

2. It depends upon what is understood by "usually begun." There are no terms more easily learned or more fully appreciated by children than those employed in drawing, as developed from the study of forms.

3. It depends entirely upon how they are taught. Notation and numeration are rarely taught in these days. It depends also upon how great thoroughness one tries to attain in addition. A class with habits of correct, rapid work with the addition and multiplication tables ought to be able to read and write numbers to a million and perform addition of not more than ten numbers, all below 1,000, and do everything in subtraction, multiplication, and division by numbers less than 100 within the fifteen weeks. There should be no attempt at that time to add examples of more than ten numbers or multiply or divide by a number greater than 100. Very little time should be given to explanation in either of these subjects. Some teachers will be able to do simple work in fractions.

4. Only simple work should be done with G. C. D. and L. C. M. All arithmetical work should be projected with easy examples far ahead of the work done thoroughly, and it should be frequently reviewed with more difficult work than before. There is a sense in which a subject in school work with children is never mastered.

Is the Swedish system of calisthenics adapted to country school work? C. I. T., Vermont.

Yes, specially adapted. It is a system with a principle, applied by philosophical methods, and is usable anywhere, by any teacher who will take a little time to learn how to teach it.

Would you advise me to introduce physiology, algebra, and bookkeeping into my ungraded school? M. E., New Jersey.

Physiology, certainly: algebra, no, unless there was an exceptionally bright class that wished it; bookkeeping, if there was time and a bright class.

What is the Socratic method of teaching? NOT A SOCRATES.

It is the conversational method on a scientific basis. It is the highest art of questioning for developing thought and forming judgment.



[The teacher will find it pleasant, as a variety, to silently read the stories, or selections, then repeat in her own language before the class, which in turn reproduces, orally or in writing.]

REPRODUCTION EXERCISES.

BY M. E. C.

AN OUTDOOR PICTURE.

[Adapted.]

[For grammar grades.]

[Write upon the blackboard; allow the pupils sufficient time for reading carefully, either orally or silently. Erase and reproduce orally in pupil's own language.]

Not the least of the charm of camping out is your camp-fire at night. What pictures are boldly thrown or faintly outlined upon the canvas of the night! Every object, every attitude of your companion is striking and memorable. How the shadows leap, and skulk, and hover about! Light and dark are in perpetual tilt and warfare, with first the one unhorsed, then the other. The friendly cheering fire, what acquaintance we make with it. We had almost forgotten there was such an element, we had so long known only its dark offspring, heat. Now we see the wild beauty uncaged, and note its manner and temper. It carves itself a chimney out of the fluid and houseless air. A friend, a ministering angel in subjection; a fiend, a fury, a monster, ready to devour the world, if ungoverned. By day it burrows in ashes and sleeps; at night it comes forth and sits upon its throne of rude logs, and rules the camp, a sovereign queen.

ANOTHER PICTURE—THE BURNING TREE.

[Adapted.]

[To be used as an exercise, as above is used.]

Near the camp stood a tall, ragged, yellow birch, its partially cast-off bark hanging in crisp sheets or dense rolls.

"That tree needs the barber," we said, "and shall have a call from him to-night."

So after dark I touched a match to it, and we saw the flames creep up and wax in fury until the whole tree and its main branches stood wrapped in a sheet of roaring flames. It was a wild and striking spectacle, and must have advertised our camp to every nocturnal creature in the forest.

RAIN THOUGHTS.

[Adapted.]

[To be used in same manner as last two.]

The great fact about the rain is that it is the most beneficent of all the operations of nature; more immediately than sunlight, even, it means life and growth. Sunshine abounds everywhere; but only where rain or dew follows, is there life. What a spur and impulse the summer shower is! How its coming quickens and hurries up the slow, jogging, country life! The traveler along the dusty road arouses from his reverie at the warning rumble behind the hills; the children hasten from the field or from the school; the farmer steps lively and thinks fast. In the hay-field, at the first signal-gun of the elements, what a commotion! How the horse-rake rattles, how the pitchforks fly, how the white sleeves play and twinkle in the sun or against the dark background of the coming storm! One man does the work of two or three. It is a race with the elements, and the haymakers do not like to be beaten. The

hay must be got under shelter, or put into snug cocks before the storm overtakes them.

MAY BUG AND GOLD BEETLE.

"Go away, you beggar, in your brown coat!" said a gold beetle to a May bug, who had sat down on an elderberry bush. "Go; I do not like your company."

"Do you think that you are any better than I, because you wear a shining coat?" replied the May bug. "You ought to know that the coat does not make the man. I am worth a good deal more than you."

And now the two beetles began to quarrel, till at last they tried to push each other off the bush. Of course it came to blows. They seized each other by the feet, the wings, and the palps, and—fell from the twig to the ground, where a cock was waiting. He snapped them up,—one,—two! and both were killed and eaten. Now the fight had an end, and the rooster did not care a straw which of the two was worth more than the other.

I consider the AMERICAN TEACHER, all things considered, the best teachers' paper for the masses. I would not be without it, as I have found it pays a larger interest on the investment than any other paper I read.

GEO. W. COLBORN, *Park River, No. Dak.*

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THE AMERICAN TEACHER.

A. E. WINSHIP,
W. E. SHELDON, } Editors.

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THE school is making citizens.

CLAY MODELING has come to stay.

THESE are the days for the best work.

AN educational "crank" is a nuisance.

THE eye is a great power in discipline.

DOES your school make pupils more truthful?

THE Book-a-Month Course is a great success.

THERE is need of expert institute lecturers.

A SCHOOL without inspiring singing has a weak spot.

ALL the new states are on the right track educationally.

SELF-CONTROL is important to the teacher as to the pupil.

UTILIZE your school paper by a letter to parents and pupils.

GOOD teaching makes the best of temperance men and women.

"THE Little Schoolhouse" is the war-cry in Wisconsin.

REMEMBER that teaching is a privilege as well as a responsibility.

To know, to think, to do, to be, are the things every school is to teach.

THE teacher must always stroke the community the right way of the "fur."

WHISPERING is out of place in the schoolroom; it is equally so in an institute.

VERMONT has risen a hundred per cent. in the educational scale within a year.

MASSACHUSETTS institutes have improved beyond precedent in enthusiasm and efficiency.

THE autumn institutes are, as a rule, the best ever held in attendance, attention, and instruction.

THE teacher who does not appreciate good books will never teach their appreciation to children.

A BIRD'S FEATHERS in a teacher's bonnet make it impossible for her to talk to boys about abuse of birds.

THE teacher's pay is not wholly dollars and cents, but that is no reason why she does not deserve more salary.

PENNSYLVANIA is having a great educational "boom." State Superintendent Waller is doing yeoman service in the institutes.

TEACHERS do not write enough for the best development of the art of writing. Critics cannot teach English as well as creators.

WE have hoped that the school might be kept out of politics, but if it is to go in it must go into both parties, and both must be loyal to the common school idea.

THE crusade against compulsory school laws in Wisconsin and Illinois may defeat two of the best friends the cause of education ever had, but it will so arouse the people of this land as to place the schools upon a higher plane than ever before.

CALIFORNIA is to have a new state superintendent. All teachers regret the retirement of Ira G. Hoitt, one of their best friends, but they will welcome Mr. Anderson, the present superintendent of San Francisco, one of the grand men educationally.

THE children's world is full of pain and pleasure, and they have a right to expect that they shall be so trained as to reduce the unpleasant experiences of life to the minimum, and shown how they may become participants in the purest and best pleasures their world affords in a maximum measure.

A PRIME REQUISITE for success in school administration and discipline is an *intelligent* persistency. There is a kind of firmness that is synonymous with stubbornness; this is not the kind of will-force we mean. Good discipline must be inspired and directed on the part of a teacher by sound judgment and a wise discrimination in regard to the circumstances calling for its exercise.

A TEACHERS' FAIR will be held in New York City from December 10 to 20. It is thought that fifty thousand dollars will be raised for the Teachers' Mutual Benefit Association of that city. Send along a "tidy," pair of slippers, or something else salable, and be sure you pay the postage on it. Every teacher in America should have some part in this grand movement to provide for the retired teachers of that city. Then we will branch out until we have a national society for mutual helpfulness.

CHILDREN have a right to expect that their individuality shall be recognized and respected by their teacher, and that their natural and hereditary traits shall be duly taken into account by her in their intellectual and moral training.

GIVE the child something to do that will agreeably engage his activities of hand and brain. The aim should always be to guide the spontaneous activities of young children which are wild, crude, and ever-changing, if left to themselves, and crystallize them into an earnest purpose of action that shall ultimately enable them to garner for themselves the priceless treasures of wisdom and knowledge.

GOOD MANNERS and uniform politeness should be practiced by a teacher and required of pupils in all their intercourse in school life. True politeness depends, in the best sense, upon the rights of others, and has its foundation in feelings of kindness, reverence, and respect, which should be illustrated by the use of such forms of expression and manner as will indicate that they are in active exercise, and become a matter of habit, based upon a sense of duty.

QUESTIONS are the avenues to the child's mind, and should be regarded of importance, and replies made should be such as will stimulate an honest spirit of investigation. Convince the learner that it is a pleasure to the teacher to answer questions prompted by an earnest desire to learn. If the spirit of inquisitiveness becomes unprofitable in frequency or in character, exercise tact in restraining it, so that the child shall seem to enjoy the right of personal liberty in gratifying his curiosity, and yet be influenced in the form and nature of his questions in a direction that will be a means of real profit to him.

LESSONS of example and precept should daily be given young children in the schoolroom that will tend to stimulate them to generous action in all the relations of their school life. They should be made to comprehend that "there is always room at the top," where they will have a more extended vision and where they may reflect upon and commune with the sweetest and best that their life affords. Wisdom and Knowledge have their tents pitched on the summits. It is true that all children cannot be made by the best efforts of the wisest teacher to become young Washingtons or Franklins or Lincolns, for no teacher, however wise and efficient, can gather "grapes of thorns nor figs of thistles," nor make natural dullards exhibit the fire of genius. The real genius soars aloft on wings the stupid mind can never adjust to his aspirations. The real genius breathes another atmosphere and lives another life, but the earnest and sagacious teacher can train the dullest mind so that it will enjoy the common

things of life, and thus fill to the full its measure of usefulness.

SWEDISH GYMNASTICS.

We have many inquiries about the Ling gymnastics recently introduced into the Boston schools. In a brief editorial we can merely refer to it. Sweden has given the world the first thoroughly scientific system of physical exercises. Heretofore we have had German gymnastics with variations, but upon no great principle, with no philosophic method, and without scientific application. We have used it to music, which we now know to be a mistake; we have aimed at tremendous vigor of movement, which is also a mistake; we have had in view the way it looked rather than what it accomplished; we have aimed to make the strong and the strongest parts stronger; we tested our work by the highest attainments of the best. This is a good deal of a sentence, and that it may be appreciated we advise a second reading. We think it a correct statement of the case as it is.

The Ling System, brought to this country through the philanthropy of Mrs. Mary Hemenway of Boston, first appreciated the mischievous tendency of music in all physical exercises that are to be progressive. It aims at *rhythm* rather than musical precision. Rhythm is not the metre of verse or the melody of song, but is that indefinable element that makes some prose classic. It is the grace of perfection without the framework of metre, the fascination of rhyme or melody.

The Ling exercises, directed by the voice of the leader, require attention and thought, and make him ever the inspiration deciding the time and energy best adapted to each movement. It is a physical rhythm, and not a military, musical, mechanical action. It is a happy medium between the limpness of the Delsarte and the rigidity of the German. It bases its activity upon the great fact that naturally we are developing all our muscles on the inward or forward motions; that by nature we work forward and downward to the form and condition of other animals, and that the only requirement is for energy upward and outward. In the other systems there was the same energy in moving the arm forward and downward as upward and outward. Now there is almost no energy expended in any return movement; it is concentrated on the outward and upward.

While the appearance is of little importance, it of necessity being natural, makes by far the most attractive exercises when the results are obtained. The beauty is in the final movements, not in the drill exercises. Its test is the strengthening of every weak place. It detects every weak spot in the human system and invigorates it. It is a system in that it has a few great principles, a few simple methods, and a few primal exercises. Its sixty exercises are to all physical necessities what our few sounds in speech are to the wealth of language with its hundred thousand words.

Music Department.

THE BASIS OF SOUND INSTRUCTION.

BY W. S. TILDEN.

THERE are many singers and players, and some teachers, who are much enamored of those variations of movement, time, or accent, which go under the name of "expression" in common speech. It often seems that they feel impatient of anything like uniform accuracy, and long for the strange, unexpected, exceptional things.

However much certain variations, graces, or embellishments may sometimes add to the performance of a piece of music, they should never be attempted except under competent direction; for though pleasing to a low taste they are often an abomination to those who have real musical culture. And whether they are ever to be admitted or not, it is plain that they must never be tolerated in the class of beginners. All efforts to introduce portamento, ritardando, accelerando, and misplaced accent should be rigidly banished until the proper basis for good instructions is established, and that we hold to be

Mechanical Accuracy.

We often have occasion to call to the front some person to play for the class. The tune is a perfectly simple one, and said player feels abundantly able to do that and ever so much more. We hear the tune through, and we feel like saying, "My dear young friend, you struck all the notes; you could see the lines and spaces on which they stand, but the different shapes of notes which indicate proportion of duration mean nothing whatever to you."

Then again we often find our performer ignoring a rest at some vital point in the tune, and spoiling the whole effect of the next grand attack by anticipating the time. This is disappointing for two reasons; first, it shows inaccurate reading, and second that the performer has no sense of musical form, and so cannot perceive that the time of the rest is absolutely needed to properly finish the section or phrase. A failure like this is just as disagreeable to the correctly educated ear as would be the rankest discord.

As the proper foundation work for sound progress we should demand, then, precision in at least three ways,

First, that the right pitch be struck.

Second, that proportionate durations be observed.

Third, that accent, the mainspring of movement, be made apparent.

Now as to the first. Learning to sing at sight presents a difficulty with which the piano student has comparatively little to do, as each pitch upon his instrument is fixed for him beforehand by the tuner. The singer, on the other hand, if he is to strike the pitch of his notes without depending on outside help, must so train his mental faculties that the sight shall suggest the sound.

Certainty as to the thing to be done is mental; the ready and effective doing is the acceptable "outward sign of the inward act." Vigor without harshness, sweetness without effeminacy, are the qualities to be sought for in vocal delivery. And this in class work excludes all sliding, gliding, and namby-pambyism of style. And as to the various singing sounds as objects of thought, it is safe to say that one who can only recall a sound from its name or sign when hearing it struck for him, or when pronouncing a given word or syllable, has not yet an adequate working knowledge of sounds.

Considerable practice is necessary in going from sound to sound arbitrarily; but this alone does not yield the fullest results. There must be an acquaintance with the subject in the concrete as well as the abstract,—tunes, as well as exercises. The same is true of the second point of accuracy above, in regard to relative duration. Though by various appliances the mind may be brought to measure sound-lengths one by one, this is only working in abstractions. The full benefit and significance of the distinctions in length are seen only when combined in some well written tune, accompanied with a pleasing rise and fall in pitch. Even here, however, it is necessary to separate the elements occasionally, and practice the time without the melody, so that when recombined it may appear more distinct and clear.

In speaking of the third point, of accent, while the accentuation within the measure, namely: the strong part at the beginning, and the subordinate accents that arise in the longer measures and in divided beats, must not be lost sight of, yet it is mainly to the connected sense of this accentuation that we would call attention. From a consistent accentuation comes the *musical form*. Not less than two measures make any rhythmic sense, for the reason that no one can perceive how frequently the accent is to recur, unless he hears more than one measure. Two measures (or motives) constitute a *section*; two sections form a *phrase*; and, again, two phrases form a *period*, which is a full and satisfactory portion in music as far as its form or rhythm is concerned.

Now while the beat is the *time unit* in estimating duration of tones, the measure (or motive) is the *time unit* in the construction of rhythms; it is the germ of musical thought in regard to all movement. This should be taught practically to children from the first; not theoretically, of course, but in such a way that whenever they sing, they shall feel the answering or corresponding parts of the movement. What a pity that so many who have sharp, keen ears for pitch and for measurement of lengths, are yet so obtuse in regard to that which is, in the true and larger sense, *time* in music! It is possible to so conduct elementary instruction as directly to foster just this obtuseness. All we have to do is to write exercises in bad form, have them sung in a slow and drawling way, spend most of the time harping on the abstract view of the subject, and never let the pupils please their natural musical sense by singing any little tune which has a sprightly and well-balanced rhythm. The most robust time-perception will soon succumb to this treatment.

PAPER FOLDING.

[Primary Work used in Connection with Lessons in Reading, Number, and Color.]

BY ALBERT E. MALTBY, PENNSYLVANIA.

THE child must be interested in his work if the best educational results are to be obtained. The teacher who is able to hold the attention of her pupils will also succeed, in general, in developing and training their minds. It is not intended that these exercises shall be used simply to *amuse* the children, but rather as a means for the *waking up of mind*. It will be seen, also, that some manual training enters into the processes.

The paper used in these exercises and lessons should be of good grade, of fine texture, and preferably, tinted azure, pink, yellow, etc. Such paper may readily be obtained from booksellers or paper-dealers, and should be cut into strips four inches wide. This may be done with knife or scissors, but advantage should be taken of the facilities afforded by any book-binding or printing-office, and greater accuracy in the cutting thus be secured.

It is essential in securing the best results that the work of cutting the strips into squares be accurately done. With the very lowest grades the strips should be cut into four-inch squares, but with children in more advanced grades, the chance to secure manual training should not be neglected. The writer's classes in the second school year cut out the squares for themselves.

LESSON I.

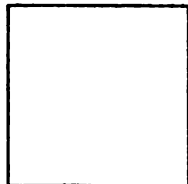


FIG. 1.

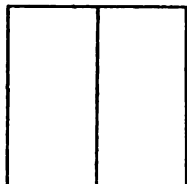


FIG. 2.

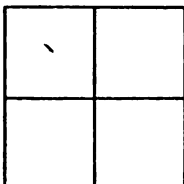


FIG. 3.

The teacher gives to each child in the class one of these squares of tinted paper (Fig. 1), and then proceeds with the object lesson somewhat as follows:—

Teacher.—What have I given you, Kate?

Kate.—A piece of paper.

Tr.—Who will tell me its shape? George may tell us.

George.—It is square.

Tr.—How many edges has it, Roscoe?

Roscoe.—There are four edges.

Tr.—Class may tell me how many sides.

Class.—Two.

Tr.—Who will tell me something else about it? Charlie.

Charlie.—It is smooth.

John.—It has four corners.

Sue.—My piece is very glossy.

Harry.—My square is pink (blue, yellow, green, red, azure, etc.).

John.—The paper is quite thin.

Tr.—Of what is this paper made? Fanny.

Fanny.—It is made from rags (John raises his hand).

Tr.—Well, John?

John.—Father works in a paper-mill, and he says that wood is used in making paper. I have seen some machines grinding the wood to pulp.

Tr.—That is true. Anna, what use is made of paper?

Anna.—Books are made from it.

Eva.—Newspapers are printed upon it.

George.—Paper is used on the walls of rooms.

Lida.—We can write upon paper.

Tr.—Who will tell me something more? John.

John.—Some paper is much thicker than this, and some is much softer, like blotting-paper.

Tr.—Name something that has the same shape as these pieces of paper.

Children.—Handkerchief, shawl, box, window, table, etc., etc.

The teacher should caution the children about soiling the paper while folding. Absolute neatness is necessary in the work, and the æsthetic sense should be cultivated throughout the lessons. The boys soon find that they must have clean hands if they would do neat work, and this condition brings about an adaptation to the requirements. The children should be consulted as to their choice in color, and the cultivation of what may be called *taste in color* should not be neglected. It is to be feared that too little attention has been given to this subject in our common schools.

If too much time has not been taken up by this lesson, the children should be allowed to exercise that general longing of the child, and do something with the squares which were placed in their hands. The lesson may be continued thus:—

Tr.—Fold one edge over to its opposite edge. Crease carefully between the thumb and finger. Who knows what we may call this form (Fig. 2.), Lida?

Lida.—A book.

Tr.—How many leaves has this book, class?

Class.—Two.

Tr.—How many pages, Harry?

Harry.—It has four pages.

Tr.—Charlie may fold his paper from the bottom of the book to the top. What have you now, when you unfold it?

Charlie.—A little window (Fig. 3.).

Tr.—Each one in the class may fold the paper to form the window. Put the little window away in your desk until next lesson.

LESSON II.

The following lessons in outline should each be given as in the preceding lesson:

1. Fold the window.

2. Turn one of the corners of the square toward you, and fold it over to meet the opposite corner. Crease, and form the *shawl*. (Fig. 4.) Unfold.

3. Fold the other two corners together, thus forming the shawl again.

4. Unfold the square and find the *star*. (Fig. 5.)

Children should be led to give names to each form as it is folded. Do not deprive them of this chance to ex-

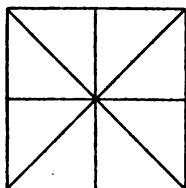


FIG. 4.



FIG. 5.

ercise the imagination by saying, for example, "Find the star," but rather ask, "What do you see where the creases meet?"

5. Bring one of the corners of the square toward you, and fold it to the center of the star. Crease.

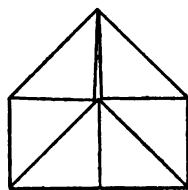


FIG. 6.

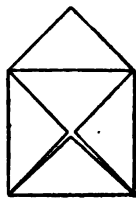


FIG. 7.

6. Turn the right-hand corner toward you, and again fold to the center. What have you now? *A house*. (Fig. 6.)

7. Repeat (6) What is the new form? *An open envelope*. (Fig. 7.)

8. Repeat (6). What is the new form? *A closed envelope*. (Fig. 8.)

Shall we not send this letter to some friend? We will write his address upon the envelope. This is Willie's address. (Fig. 9.)

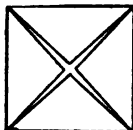


FIG. 8.

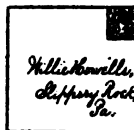


FIG. 9.

Teachers of reading and language will write upon the blackboard the names of the objects folded,—*book, shawl, house, star, square*, etc., and have the children read them. Also, as an exercise in language, have the children make statements about the forms. Thus:

Tr.—Charlie may tell me about his square.

Charlie.—My square is pink.

Tr.—Roscoe may tell me.

Roscoe.—There are two leaves in my red book.

Lida.—The shawl is blue.

If children are taught to speak well before they learn to read, they will never afterward require special teaching in order to read with expression.

Work in primary number may also be done, as:

Tr.—How many creases has your square, George?

George.—My square has four creases.

John.—There are eight equal parts in my square.

Grace.—Each of the leaves in my book is one half the book.

Katie.—This little window has four panes.

Sue.—Four creases make the star.

George.—If I sell three books for four cents each, I shall have twelve cents.

Success in number lies in requiring the child to show what he is talking about.

Knots and Tangles.

Original puzzles, answers, and all other correspondence relating to this department, should be indorsed "For Knots and Tangles" and addressed to Puzzle Editor, Box 838, Sharon, Pa.

95. ADDITION OF FRACTIONS.

One sixth of a *turkey*, just browned to a T;
One fifth of some *honey*, the work of the bee;
Two ninths of the *cranberry* sauce then, I wish;
Two sevenths of *pickles*, so green in the dish;
Two sevenths of *pudding*,—I don't care what kind;
One fifth of the *gravy*,—it's plenty, I find;
One fifth of a *mince* pie; that size will just suit;
One sixth of the *grapes*,—a most excellent fruit.

In order add the fractions given,

'Twill bring to light a day,

When we must watch, or we are apt,

To over-eat, they say.

96. NUMERICAL ENIGMA.

I am composed of 49 letters.

My 41, 48, 4, 44, 24, 30 moves gently.

My 8, 20, 39, 14, 28, 11 is gravity.

My 32, 19, 42, 38, 40 is a conveyance.

My 36, 49, 10, 27, 25, 19 is hasty departure.

My 18, 2, 47, 81, 23 is trustfulness.

My 1, 23, 3, 29, 13, 7 is manifest.

My 16, 3, 34, 48, 26, 45, 23 is highly fashionable.

My 46, 43, 35, 37, 5, 21 is made of wood.

My 49, 12, 17, 6 is a powerful animal.

My 15, 22 is a pronoun.

My whole is a saying of Collier's, and can be made very helpful to all of us.

97. CHARADE.

I know, you know, I think all know,

Second first a tree can climb;

And third to dizzy heights thereon,—

I've seen it many a time.

When hunters passing through the woods,

See *whole* crouched in a tree,

They either shoot or run away.

It's dangerous,—don't you see?

98. WORD HALF-SQUARE.

1. Looking earnestly; 2. A vegetable; 3. Improper; 4. Headless; 5. A possessive pronoun; 6. A negative; 7. A consonant.

99. LETTER REBUS.

N and S and B and T,

Then two O's and a city you'll see.

An H, and D, O, S, and U

These, with N, bring a river in view.

ANSWERS TO OCTOBER PUZZLES.

90. Caprice.

91. Laramie, Helena, San Francisco, Virginia City, Stockton, Salem, St. Joseph, Portland, Oakland, San Diego, Silver City, Carbon, Boulder, Black Hawk, Park City, Carson, Baker City, Dayton, San Rafael.

92. Grave, dove, thirty, limber, gem, vile, me: "Give me liberty or give me death."

93. Dared—dread.

94. (1) Andrew Johnson; (2) James A. Garfield; (3) James Buchanan; (4) Chester A. Arthur; (5) John Adams; (6) James Madison.

BOOK A MONTH COURSE.

THE first book of the year was George Howland's *Practical Hints for Teaching*, published by D. Appleton & Co., New York; pp. 200. Price, \$1.00. The second was Rousseau's *Emile*, the D. C. Heath & Co. (Boston) edition; pp. 157. Price, 80 cents (special for this course). The third book is Compayré's *Elements of Psychology*, W. H. Payne's translation; published by Lee & Shepard, Boston; pp. 316. Price, if ordered from us, \$1.00, by mail; publisher's price, \$1.10. This is the psychology preëminent for the average reader. It is scholarly without many technicalities; it is modern without the conceit of "newness"; it is comprehensive without being vague; it contains only the essentials without eliminating the essential of vivacity; it gives the results of research without the tedious details of scientific investigation; it has the inspiration that disseminates psychological truth; it is readily intelligible, and does not require any "extraordinary scientific acumen"; it is reverent in its attitude to the truth; it is not an encyclopædia of psychological science, and yet it is a treasury of the most important results of the best thinking; it is not designed for the specialist, and yet it commands the respect of specialists; it is interesting, and will be read with enthusiasm by those who are unfamiliar with the science.

Before you begin the reading of this book, read all the summaries, pages 39, 54, 71, 85, 100, 116, 132, 147, 161, 177, 191, 208, 222, 238, 257, 271, 286, and 301. Do not try to understand all that is suggested in these summaries, but read them all, that you may get some idea in advance of the scope of the work.

Do not read the introduction as a whole until after you have read the book about half through. Sections 17 and 18 of the introduction could be profitably read first. Form the habit of looking up every star (*) in the Special Index of Proper Names and Technical Terms, at the end of the volume.

Read Chapter I. First run through the titles of the sections of the chapter, then reread the summary, and then read the chapter carefully. In this general way treat the other chapters.

QUESTIONS TO BE ANSWERED.

1. Distinguish between empirical and rational psychology.
- Distinguish between psychological and physiological facts.
3. Distinguish between instinctive, conscious, and voluntary movements.
4. Distinguish between sensitive and intellectual facts.
5. Distinguish between physical activity and physical sensibility.
6. State what you learn that is helpful to you as a teacher, regarding the memory.
7. The same (as 6) about the imagination.
8. Name two Greek philosophers who lived before

Christ; a living Scotch philosopher; a French philosopher who died 1840; who died in 1857; in 1780; a Scotch philosopher who died in 1856; a German philosopher who died 1804; in 1716; an English philosopher who died in 1704; a living English philosopher. For answers to these questions, consult the Special Index at the end of the book.

9. Name the three most important sections in each chapter.

10. Which chapter in the book has been most valuable to you?

11. Which has been most interesting?

12. Which the most difficult to understand?

OBSERVE THE CHILDREN.—(II.)

BY ALBERT E. WINSHIP.

BEST ATTENTION. There are various shades or phases of attention, of which four only will be provided for. The first is attention to what is seen; second, to what is seen and heard; third, to what is heard; and, fourth, to what is read.

Attention to what is seen. Show the class a dry sponge, place a corner of it in water. Hold it there until it has absorbed as much water as it will, then squeeze it into an empty dish; show them how much came out; then put it wholly into water, and, having emptied the water from the other dish, squeeze it all into the same dish. Take a piece of good blotting-paper and put a corner of it in the ink; let it suck up all it will, and try to press it out. Take a piece of perfectly dry sponge and pull off a piece; then fill it with water and squeeze it out, and then tear off a piece. Take a piece of dry blotting-paper and pull it steadily, so as to get the greatest strain without tearing; then let it soak up water, and then show how easily it tears. Let the pupils write what you have done. This will test their attention through sight.

Attention through sight and hearing. Show the class five leaves, one at a time, the simplest shape first; call attention to its shape; compare it with something of similar shape; give its name. Lay it aside, and do the same with the next simplest, and so on with the five. Then let them draw as best they can the five, giving the name and shape of each. This a severe but good test.

Attention through hearing. Describe something that you have seen; make it simple, clear, interesting, brief, and see how much of it has impressed the pupils as judged by their description.

Attention through reading. Let them read something silently,—a good, clear, simple, interesting, brief description of something they have never seen, and see what they can reproduce of its thought without giving any of the words.

Please forward the average age; the number in the class; the percentage that did finely, fairly, poorly, very poorly, under each of the four cases. This may be uninteresting to you at first, but it will be highly profitable before you are through. If, however, any one of these four tests does not commend itself to you as worthy your effort, it is better to omit it than to do it in a half-hearted way.



THE FIRST THANKSGIVING.

BY M. A. H.

[CHARACTERS—Ned Alden and Harry Brooks; ages respectively, twelve and ten years.]

[SCENE—Schoolroom. Harry seated at a desk, working out a problem.]

[Enter Ned.]

Ned.—Good morning, Harry. You are early this morning; so am I. It will be a half hour before the teacher gets here.

Harry.—Good morning, Ned. Yes; I come to work out this problem before school. I hate problems. I say, aren't you glad this is the last week of school? Hurrah! Next week's Thanksgiving, too. Good times for all. I tell you there is fun in Thanksgiving.

Ned.—Guess you would think so if you were at our house at Thanksgiving. It is just packed full of the jolliest set of people you ever saw. There are Uncle Ralph and Aunt Lizzie, and all their children,—Frank, Annie, Ralph, Jack, and little Bert. Then Uncle Charles and Uncle Richard and their whole families are sure to be there. Oh, we have a merry party, I can assure you. I can hardly wait for next week to come.

Harry.—We don't stay at home; we all go to Grandma Price's,—my father and mother, my four uncles, and about a dozen cousins, two of them,—Tom and Fred Price,—just home from college for Thanksgiving. They know how to have a good time, I can tell you. And you ought just to see the turkeys and chicken pies, and cranberry sauce, and mince pies, and "blind man's buff," and charades, and the nuts and cake, and ice cream, and bonbons, and —

Ned (interrupting him).—I say, Hal, do you have "blind man's buff" and charades on the table?

Harry.—Oh, you quit! If you had such a dinner as my Grandma Price has, guess you'd want to stop and play "blind man's buff," or almost anything else before you could eat it all.

Ned.—Well, our Thanksgivings aren't much like that first Thanksgiving, are they? We have all the good things, and they gave all the thanks; at least, I don't believe many people in these days stop to think what Thanksgiving is, and why we have it.

Harry.—Thanksgiving; giving thanks. Why, I never thought of it in that way before. But who did have the first Thanksgiving, anyway?

Ned.—The Pilgrim fathers. One of our ancestors, John Alden, you know, came over in the "Mayflower," and sister Mary was reading to me about it last night,—how they came to Plymouth in December.

Harry.—Of course I know about that.

Ned.—Well, the winter was a hard one for them all, and about half their number died, so there were not many who had not lost friends. Then their provisions gave out, and —

Harry.—Yes, I remember that; but what did they have for their first Thanksgiving dinner?

Ned.—But you must wait till I tell you how it came about. When they were nearly out of food, a ship came to them from England, laden with more food, and seed for them to begin their first farming in Massachusetts. Then, in the fall, they had such a full harvest that they were really thankful, you see.

Harry (thoughtfully).—So they thought they'd give thanks, and that made Thanksgiving. And the dinner was only a second thought after all. Was that so?

Ned.—Yes; they probably had some wild turkeys, some venison, stewed pumpkins, and Indian corn cooked in some way. Then they invited Massasoit and about ninety of his men. They brought five deer, so history says, and their Thanksgiving feast lasted three days.

Harry.—I wish Grandma Price's Thanksgiving would last three days. I wonder if they stuffed their turkeys, and cooked the deer whole.

Ned.—I wonder if the children had found the walnuts and butternuts and hazlenuts that grew in the woods, and if they played Copenhagen and "blind man's buff."

Harry.—Oh! I overheard Aunt Jane and sister Sue talking, a few days ago, and aunt said she thought if Elder Brewster had seen the lambs of his flock playing Copenhagen, he would have harled the decalogue at them. I asked her what kind of a log that was, and she called me a little heathen. I'll ask her to-night if she was talking about the Pilgrim children's Thanksgiving. But come, let's go out and have a game of ball before the bell rings.

THE PIEMAN.

BY ANNIE M. LIBBY.

I'M a pieman, I'm a pieman,
Hear me ring my bell!
Pies of apple, pies of mince,
Pies of plum, and pies of quince,
Here I have to sell.

I'm a pieman, I'm a pieman,
Hear me ring my bell!
Pies of pumpkin, made with spice,
Pies of squash, and pies of rice,
Here I have to sell.

I'm a pieman, I'm a pieman,
Hear me ring my bell!
Tell me what's your favorite pie;
Come, and in my basket spy,—
I have it to sell.

I'm a pieman, I'm a pieman,
And I'll serve you well;
But when all my pies are sold,
I'm no more a pieman bold.
Silent is my ball.

Yet, if you won't come and buy,
Sharper, shriller grows my cry,
Louder rings my bell.

HOW TO LEARN.

TAKE any word
You ever heard,
Or any sound
You ever found,
And you will spell
It very well,
If you will fit
It bit by bit,
And take great care
To put all there.

'Tis good to know
How letters go,
And good to learn
How letters turn,
And if you mind
The words you find,
You soon indeed
All books will read.

CHOICE OF TREES.

(For thirteen little boys.)

BY ADA SIMPSON SHERWOOD.

FIRST BOY.—Come boys, let's choose our favorite trees,
And tell the reasons we like them best.
Of all the trees I know, I choose
The hickory tree above the rest;
For oh, I love the nutting time,
In autumn, when the woods are bright,
And then what fun to crack and eat
The nuts on a dreary winter night.

Second Boy.—O fie on your choice of the hickory-tree!
The butternut tree is better, I say;
And they go to the hickory tree for whips.
I wouldn't choose that tree, anyway.

Third Boy.—Neither would I choose the butternut tree,
When a walnut tree is much the best;
And when it is made into lumber, you know,
It goes ahead of all the rest.

Fourth Boy.—If you're speaking about your favorite nuts,
I choose beechnuts, as a general rule.
Beech trees are common everywhere,
And the woods on my papa's farm are full.
And I want to tell what I found one day,
All hidden away in a hollow tree,
As much as a pint of the white, sweet meats
Some little squirrel had shelled for me.

Fifth Boy.—I'm surprised that so many have spoken of nuts,
And left the beautiful chestnuts out.
Of all the fruits that a tree can yield
They are the best, without a doubt.
I wish I had lived in these good old times
When they gathered around the fireside wide
And roasted these nuts in the ashes hot,
While the apples sputtered side by side.

Sixth Boy (very small).—I'd like a peanut tree the best,
If I only knew where one could be found.

Fifth Boy (turning toward sixth boy).—
Why, you little fellow! Don't you know
That peanuts always grow under ground?

Seventh Boy.—We were asked to tell, not our favorite nut,
But which of all was our favorite tree,
The grand old oak shall be my choice,
King of the forest, I say, is he.
For a thousand years he will boldly stand
In proud defiance of wind and storm.
And what could we do for our ships' huge beams
But for the strength of his mighty arm?

Eighth Boy.—My choice shall be the beautiful elm,
Grand and stately, and graceful and tall.
Your oak may be sturdy and strong, but the elm
In beauty shall reign the queen of all.
I should like to live in "The City of Elms,"
New Haven, you know, where the streets are wide,
And filled with the thick, cool, pleasant shade
Of the stately elms on either side.

Ninth Boy.—I like the poplar the best of all,
Growing right up so straight and high.
I should like to know what he can see
With his head reaching almost to the sky.

I mean to climb to the top some day.
How small you boys will look on the ground!
And I wouldn't wonder if I could see
The whole great world so big and round.

Tenth Boy.—Of all the trees that grow in the woods
I like the maple tree the best.
No tree is so grand in the autumn time,
When in gorgeous gold and crimson dressed.
And then it knows in the happy spring
How gladly our waiting hearts to cheer;
For I'm sure that the maple sugar time
Is the sweetest time of all the year.

Eleventh Boy.—If I could have just the tree I like
And had some giants to work for me,
I'd send them away in a mammoth ship,
To Africa, after a baobab tree.
I'd set it out in my father's yard,
And then, I think, as a general rule,
I'd climb the tree and use the limbs
As a pleasant and easy way to school.

Twelfth Boy.—If I were to take as much pains as that
To send away for a mammoth tree,
I think California's great red woods
A far more excellent choice would be.
And when you wanted to cut the tree
A fortune to gain at a single jump,
You'd have lumber enough to build a town,
And could make yourself a house in the stump.

Thirteenth Boy.—I like the evergreen trees the best
Cedar and hemlock, and pine and spruce.
Of all the trees in the world, I think,
That these will prove of the greatest use.
Tops and whips, and sleds and skates,
Pop corn, candy, and nuts so free,
Are some of the many fruits they yield
When they make them into the Christmas tree.

CLIMBING UP THE HILL.

Tune: "Bringing in the Sheaves."

BY ADA SIMPSON SHERWOOD.

UP the hill of knowledge we are daily climbing,
Though the path is steep, and rugged is the way;
Yet 'tis perseverance conquers every trial,
As we're pressing onward, upward day by day.

Chorus.—Climbing up the hill, climbing up the hill,
Up the hill of knowledge with a right good will.
Climbing up the hill, climbing up the hill,
We are daily striving, climbing up the hill.

Though temptations call us to the paths of pleasure,
Though they try to rob us of our strength and skill,
Courage never slackens, and with strong endeavors,
We are daily climbing higher up the hill.

Chorus.—Climbing up the hill, etc.

We have faithful guides who cheer and help us onward,
We must still keep striving with a right good will,
With our eyes firm fixed upon the glorious summit,
As we're daily climbing higher up the hill.

Chorus.—Climbing up the hill, etc.

Notes and Queries.

Questions and answers for the Notes and Queries should reach us by the first of each month. We respectfully request all the readers of THE TEACHER to take part in the discussions of this department. Send in questions, and furnish answers to questions given.—Eds.

ANSWERS TO QUERIES.

598. What states have compulsory educational laws?

Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Ohio, Illinois, Michigan, Wisconsin, Minnesota, No. Dakota, So. Dakota, Nebraska, Kansas, Wyoming, Nevada, California, Washington, Idaho, Montana, Alaska, District of Columbia.

604. How does the island at the mouth of the Amazon compare with the state of Massachusetts?

Marajo is 180 miles long and 125 miles wide, with a population of 20,000. It is therefore longer and much wider than Massachusetts.

606. What are the requisites of a territory before becoming a state?

It is authorized by Congress, and officers are appointed by the President to manage its affairs. It is entitled to a delegate in Congress, who is not allowed to vote. A. W.

630. Are there any islands in the West Indies belonging to the United States? If so, what ones?

None.

631. Where is the Vermillion Sea?

We only know of a Vermillion Bay in Louisiana, and a Vermillion Lake in Minnesota.

653. Is the expression $\frac{3}{4}$ proper, and if so, how can it be read? It is not a good form. There is no excuse for using it. It is liable to misinterpretation. C. W. S.

656. Note.—I beg leave to disagree with H. I. B., in 656. "I disbelieve it to be him." The verb *to be* is an attributive verb, not a transitive one. It cannot govern the objective case, but always unites the words in the same case. Hence *him* is objective case after verb *to be*, not object of. If "*it*" were *to be* in nominative or possessive case, *him* also would be nominative or possessive case. H. A.

682. Will "N. M.," p. 30, No. 682, give illustrative sentences? H. A. F.

683. Give an example of a noun used to limit another noun meaning the same person or thing.

Mr. Keys, the lawyer, is here. *Lawyer* is a noun, used in apposition with Mr. Keys. N. M., Chico, Cal.

684. Give an example of an adverb of place modifying a word understood; also one of time performing the same office.

"Here, my boy, don't you understand?" *Here* is an adverb of place, modifying "come," understood. *You* is the subject understood. "Now, or never," was his reply. *Now* is an adverb of time, modifying "can go," understood. *You* is the subject understood. N. M., Ohio.

686. What is the origin of the phrase, "All for buncombe"? When a member of Congress, from the county of Buncombe, N. C., some years since, was making a speech in Congress, many of the members left the hall. He very naively told those that remained that "they might go too,—he was only talking for Buncombe." R. S. M., Bath, Pa.

Credit to C. L. F. East Peoria Ill., to M. S. S. Greensburg, Pa.

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687. Who was the only woman in the United States to whose memory a monument has been erected by the public?

Mother of George Washington.

W. T. M.

688. What are the states that have increased the least in population during the past years.

All have increased except Nevada, which has decreased in population during the past ten years.

C. L. F.

690. He struck me a hard blow. Parse "me" and "blow."

Me is a personal pronoun, masculine or feminine gender, first person, singular number, objective case, the object of the preposition *on* understood. The phrase *on me* modifies *struck*.

Blow is a common noun, neuter gender, third person, singular number, objective case, the object of the verb *struck*.

Another Opinion.—*Me* is a pronoun, personal, common gender, first person, singular number, objective case, object of transitive verb *strikes*.

Blow, noun, common, neuter gender, third person, singular number, objective case, object of preposition *with* understood.

Still Another View.—*Me*, personal pronoun, first, singular, common, objective, indirect object of the verb *struck*. *Blow*, noun, common, third, singular, objective, direct object of the verb *struck*.

H. A. F.

This is a case of double object, both *me* and *blow* being obj. case, object of verb *struck*.

C. L. F. East Peoria, Ill.

Credit to B. C., New Lexington, O.

Another Opinion.—In parsing him, "H. I. B." says it is the object of the infinitive to be. Will he cite his authority for the last part of the statement?

C. F. W., Compton, California.

691. There have been two equal annual payments on a 6% note for \$175, given two years ago to-day. Balance due, \$154.40. What was each payment?

Let 100% = each equal annual payment. The amount of \$175 for

1 year at 6% is \$185.50. $\$185.50 - 100\% =$ amount due after first payment, or second principal. The amount of $(\$180.50 - 100\%) = (\$196.63 - 106\%)$. $(\$196.63 - 106\%) - 100\%$ (second payment) $= (\$196.63 - 206\%)$, amount still due after both equal annual payments are made. $\$154.40 =$ amount left after both equal annual payments are made. $\therefore \$196.63 - 206\% = \154.40 . $206\% = \$42.23$; $1\% = \$2.05$; $100\% = \$20.50$ each payment.

J. F. W., Compton, Cal.

Credit to T. S., Gold Hill, Nev.; L. N. D., Pottersburg, O.; C. K., Frankenmuth, Mich.

692. Can a person increase the weight of the brain by study?

We cannot increase the weight of the brain by study, but the surface is increased.

W. T. M.

693. Why do not the authors of physiologies agree as to the number of bones in the human body? Some authorities give the number as 206; others give 208, 211, and 216. Which is correct?

Physiologists cannot agree, because at different stages of life the number of bones vary, and neither 206, 208, 211, nor 216 is correct.

W. T. M.

694. Explain what is known as the "Australian system of voting."

A full explanation of the system would be too lengthy. The principal points are these: Candidates must be nominated, either by convention or by a petition signed by a specified number of voters. Ballots furnished at public expense, the names of all candidates being printed on the same ballot, blank spaces being left on the ballot for the insertion of names other than those nominated. Ballots must be procured from an officer at the polls, and all ballots printed must be accounted for. Voter, upon receiving ballot, passes to a booth or secret compartment, where he places a cross opposite the names of those for whom he wishes to vote, or writes other names within the blank spaces. He then leaves the booth and

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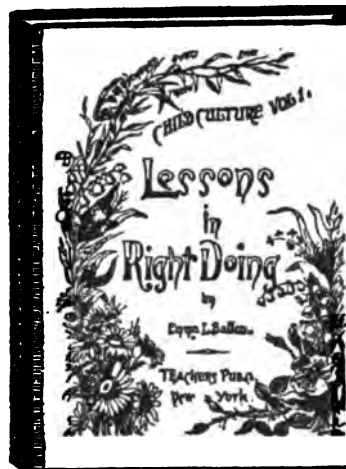
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hands the ballot to an election clerk who deposits the same in the ballot box. The voter then leaves the room. In case a voter is blind, or cannot read or write, he is allowed to take a friend or election clerk into the booth with him to assist him in marking his ballot.

605. If 12 oxen eat $3\frac{1}{2}$ acres of grass in 4 weeks, and 21 oxen eat 10 acres in 9 weeks, how many oxen can eat 24 acres in 18 weeks, the grass growing uniformly? W. R. S.

If 12 oxen eat $3\frac{1}{2}$ acres of grass in 4 weeks, it will take 4 times 12 oxen, or 48 oxen, to eat $3\frac{1}{2}$ acres of grass in 1 week; and to eat 1 acre in 1 week it will take $\frac{1}{3\frac{1}{2}}$ of 48 oxen, or $14\frac{1}{6}$ oxen, the grass being of 4 weeks' growth; and if 21 oxen eat 10 acres in 9 weeks, it will take 9 times 21 oxen, or 189 oxen, to eat 10 acres in 1 week, and to eat 1 acre in 1 week it will take $\frac{1}{10}$ of 189 oxen, or $18\frac{1}{10}$ oxen, the grass being of 9 weeks' growth.

A difference of 5 weeks' growth of grass gives a difference of $4\frac{1}{2}$ oxen per acre; therefore it takes $4\frac{1}{2}$ oxen to eat 5 weeks' growth of grass per acre, to eat 1 week of growth per acre it will take $\frac{1}{5}$ of $4\frac{1}{2}$ oxen, or $\frac{9}{10}$ of an ox. To eat 4 weeks' growth it will take 4 times $\frac{9}{10}$ oxen, or $3\frac{6}{10}$ oxen. $14\frac{1}{6}$ oxen — $3\frac{6}{10}$ oxen = $10\frac{1}{6}$ oxen to eat 1 acre of grass in 1 week, not taking into consideration the growth of the grass; and to eat 24 acres in 1 week it will take 24 times $10\frac{1}{6}$ oxen, or $259\frac{1}{6}$ oxen; and to eat 24 acres in 18 weeks it will take $\frac{1}{18}$ of $259\frac{1}{6}$ oxen = $14\frac{1}{6}$ oxen; and adding the number of oxen which it takes to eat the growth of 24 acres for 18 weeks, or 24 times $\frac{9}{10}$ of an ox equal $21\frac{1}{10}$, equals 36 oxen.—Ans.

FRED BINSON.

Another Solution.—Let us assume that an ox will eat 100 lbs. in one week, then 12 oxen will eat 4800 lbs. in 4 weeks; $4800 \text{ lbs.} \div 2\frac{1}{2} = 1440 \text{ lbs.}$ that 1 acre will produce in 4 weeks; 21 oxen will eat 2100 lbs. in 1 week; $2100 \text{ lbs.} \times 9 = 18900 \text{ lbs.}$ that 10 acres will produce in 9 weeks; $18900 \div 10 = 1890 \text{ lbs.}$ that 1 acre will produce in 9 weeks; $1890 - 1440 = 450 \text{ lbs.}$, the amount that will

grow on 1 acre in 5 weeks; $1440 \times 2\frac{1}{2} = 3450 \text{ lbs.}$ that 24 acres will produce in 4 weeks; $450 \times 24 = 10800 \text{ lbs.}$ that will grow on 24 acres in 5 weeks; $18 - 4 = 14 \text{ weeks,}$ time of growth on the 24 acres after the first 4 weeks; $10800 \times \frac{1}{14} = 30240 \text{ lbs.}$ that will grow on 24 acres in 14 weeks; $3450 + 30240 = 64800 \text{ lbs.}$ Am't produced by 26 acres in 18 weeks. 1 ox in 18 weeks will eat 1800 lbs. $64800 \div 1800 = 36 \text{ oxen.}$ —Ans. C. V.

Credit also to J. F. W. and C. K. F.

607. Three men, A, B. and C agree to reap a field of wheat for \$9.84; A and B calculate that they can do $\frac{1}{2}$. A and C that they can do $\frac{1}{3}$, and B and C that they can do $\frac{1}{4}$ of the labor. How much should each receive, according to these estimates?

$$A + B = \frac{1}{2}$$

$$A + C = \frac{1}{3}$$

$$B + C = \frac{1}{4}$$

$$2C = \frac{1}{12}$$

$$C = \frac{1}{24}$$

$$2B = \frac{1}{6}$$

$$B = \frac{1}{12}$$

$$A = \frac{1}{4}$$

$$\frac{1}{2} - \frac{1}{12} = \frac{1}{3} - \frac{1}{12} = \frac{1}{4}$$

$$\frac{1}{3} + \frac{1}{12} + \frac{1}{24} = \frac{1}{2}$$

The work is divided into 31 parts.

$$\$9.84 \div 31 = .3177$$

$$.3177 \times 7 = \$2.22 = \text{A's share.}$$

$$.3177 \times 11 = \$3.50 = \text{B's share.}$$

$$.3177 \times 18 = \$5.72 = \text{A's share.}$$

C. L. F. East Peoria, Ill.

608. What is the office of the underlined phrase in the following sentence?

"Then Evangeline lighted the brazen lamp on the table, Filled, till it overflowed, the pewter tankard with home brewed, Nut-brown ale, that was famed for its strength in the village of Grand Pre; While from his pocket the notary drew his papers and inkhorn, Wrote with a steady hand the date and age of the parties, Naming the dower of the bride in flocks of sheep and in cattle."

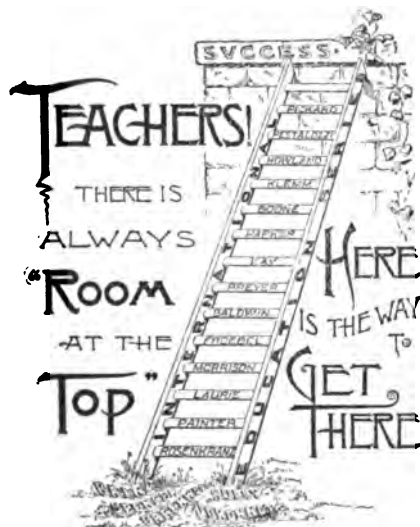
M., Red Bluff, Cal.

The underlined phrase modifies notary.

R. S. M., Bethel, Pa.

The office is that of a participial modifier of wrote. C. L. F.

609. Does history record the falling stars, which occurred about 1830-5? If so who is the author?



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Prof. Denison Olmsted of New Haven has described the great meteoric shower of 1833.
C. L. F.

701. Who taught the first school in this country?

The name of the first teacher I can find is F. Higginson, who was called to teach the school at Salem, Mass., in 1628, where Skelton was the minister.

The first school was built in Charles City, Va., and called "East India School." It was founded by Mr. Copeland, in 1621. For the maintenance of the teachers the "Virginia Company" gave 1000 acres of land, and 5 negro slaves to work it. But I cannot find the name of the teacher.
C. K., Frankensmuth, Mich.

702. Which is the best plan for transacting a commercial business, a corporation, or firm?

It depends upon the character of the business and of the men. In a firm each partner may become liable for personal liabilities of the other partners, while in a corporation he is not. A corporation is the safer, while a "firm" is a simpler method of doing a small business.
W.

704. What is the difference between a teachers' institute and a teachers' association?

An institute is conducted by authorities, county or state, while an association is created by the teachers themselves.
M. F.

706. When was the Declaration of Independence signed by the members of the Continental Congress?

The president, John Hancock, signed it on the 4th of July, 1776. Fifty-six of the members signed it August 2.

E. C. K., Tipton, Iowa.

C. K., Frankensmuth, Mich., says that all who voted for it signed it July 4, and again signed after it was written on parchment.

706. When and where was the first public normal school in the United States established?

The first normal school in America, that now established at Framingham, was opened at Lexington, July 8, 1839. It was due to the action of Edmund Dwight, who in 1838 offered the sum of \$10,000 for that purpose, on condition that the state of Massachusetts appropriate a like sum.
C. L. F., East Peoria, Ill.

QUERIES.

724. "Can an image produce an image?" This comes under the subject of light in philosophy.

725. James' money equals $\frac{1}{2}$ of Charles' money; and $\frac{1}{3}$ of James' money + \$33 equals Charles' money. How much has each?

726. What are the capitals of North and South Dakota?

727. Who was the author of the novel entitled *The Lamplighter*?

728. Who was "Charles the Bold"?

729. Whence arose the superstition that there is luck in a horse-shoe?

730. When was the Great Wall of China built?

731. What is the origin of the word "news"?

732. Is there a country or province named Bokhara? If so, where?

733. When, in our history, did a fog save our army?

734. When did a stone house decide a battle?

735. A dealer in stock can buy 100 animals for \$400 at the following rates: Calves, \$3; hogs, \$3; lambs, \$1. How many may he take of each kind? Find nine different answers and explain how the results are obtained.
F. A. G., Nashville, O.

736. Diagram and analyze:

Vice is a monster of so frightful mien,
That to be hated needs but to be seen;
But seen too oft, familiar with her face,
We first endure, then pity, then embrace.

F. A. G., Nashville, O.

737. Diagram and analyze:

Whoever thinks a faultless piece to see,
Thinks what ne'er was, nor is, nor e'er shall be.

F. A. G., Nashville, O.

738. "I am one that am nourished by my victuals and would fain have meat." Parse one, that, and the second am.

A. H. B., Long Island, N. Y.

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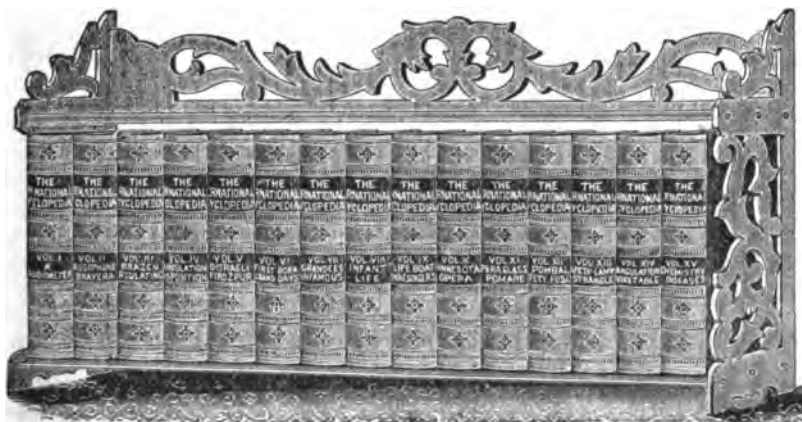
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His Sympathetic Nature and His Early Misfortunes.

Those who saw much of Abraham Lincoln during the later years of his life were greatly impressed with expression of profound melancholy his face always wore in repose.

Mr. Lincoln was of a peculiarly sympathetic and kindly nature. These strong characteristics influenced, very happily, as proved, his entire political career. They would not seem, at first glance, to be efficient aids to political success; but in the peculiar emergency which Lincoln, in the providence of God, was called to meet, no vessel of common clay could possibly have become the chosen of the Lord.

Those acquainted with him from boyhood knew that early griefs tinged his whole life with sadness. His partner in the grocery business at Salem was "Uncle" Billy Green, of Tallulla, Ill., who used at night, when the customers were few, to hold the grammar while Lincoln recited his lessons.

It was to his sympathetic ear Lincoln told the story of his love for sweet Ann Rutledge; and he, in return, offered what comfort he could when poor Ann died, and Lincoln's great heart nearly broke.

"After Ann died," says "Uncle" Billy, "on stormy nights, when the wind blew the rain against the roof, Abe would set thar in the grocery, his elbows on his knees, his face in his hands, and the tears runnin' through his fingers. I hated to see him feel bad, an' I'd say, 'Abe, don't cry'; an' he'd look up an' say 'I can't help it, Bill, the rain's a fallin' on her.'"

There are many who can sympathize with this overpowering grief, as they think of a lost loved one, when "the rain's a fallin' on her." What adds poignancy to the grief sometimes is the thought that the lost one might have been saved.

Fortunate, indeed, is William Johnson, of Corona, L. I., a builder, who writes June 28, 1890: "Last February, on returning from church one night, my daughter complained of having a pain in her ankle. The pain gradually extended until her entire limb was swollen and very painful to the touch. We called a physician, who after careful examination, pronounced it disease of the kidneys of long standing. All we could do did not seem to benefit her, until we tried Warner's Safe Cure; from the first she commenced to improve. When she commenced taking it she could not turn over in bed, and could just move her hands a little, but to-day she is as well as she ever was. I believe I owe the recovery of my daughter to its use."

The Kindergarten.

THE WINTER SLEEP.

BY KATE L. BROWN.

THE children had been building with the fourth gift, and the pretty brown boxes were put away in the cabinet. "Please, Miss Lawrence, may we talk about the new song?" asked Frank. The little eyes brightened, and Miss Lawrence was only too glad.

"Look out of the window," she said, "and tell me if it looks as it did last June when we crowned our Rose Queen."

"Oh, no!" cried Harold, "the grass is getting all brown and the leaves are falling fast. Winter is almost here."

"It was lovely last June," said Katharine. "The leaves were green and there were so many, many roses, and strawberries, too."

"Where are the flowers now, children?"

The little people were silent for a moment, then Otto, who was seven and wise, said, "It tells us in the song that 'Flower-time is past.'"

"Let us sing the first verse, children." So the children sang.

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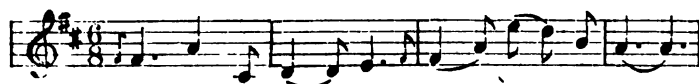
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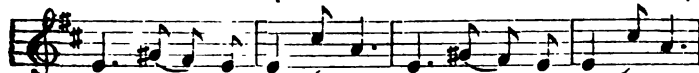
GEO. FROST & CO., 31 Bedford St., Boston, Mass.

Good-bye, little Flowers.

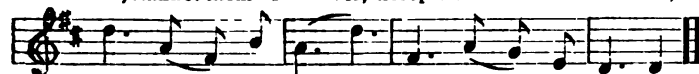
Words and Music by KATE L. BROWN.



1. Hark! through the pine boughs Cold wails the blast,
2. Cold are November skies, Sun - less and drear,
3. "Good-bye, little flow - ers," The i - cy wind is sing;



Birds south are fly - ing, Sum - mer is dy - ing,
 Golden rod, eye - lids close, As - ter, tuck up your toes,
 Snow, blanket them o - ver, Sleep well lit - tle clo - ver,



Flower time is past, Flower time is past.
 Win - ter is here, Win - ter is here.
 Sleep till the spring, Sleep till the spring.

Copyright, 1885, by S. R. WINCHELL & Co.

'Do you know what it means by 'Cold wails the blast'?"

"The pines smell sweet in summer," said little Carol.
 "Yes!" echoed her friend Maidie, "and I love to hear
 the wind sing through the pines. Auntie and I love
 to hear it when we sit down on the hill."

"But that is the soft, gentle, summer breeze, Maidie.
 Would the wind that roars around the chimneys, sing
 as sweetly through the pine boughs?"

Maidie thought not, and Otto remarked, "I
 guess the rough, wild wind is 'the blast,'
 isn't it?"

"Yes, my boy. But listen to what it says
 about the birds. Why do they go south?"

"It is too cold in winter for them to stay
 here, so they go where it is warm," said
 Harold.

"Sing the next verse, children."

"The bright colored leaves have fallen to
 the ground and are becoming brown and dead.
 Do you know what the trees do in winter?"

"They just stand still and shake when the
 wind blows," said Helen. "The tree is rest -
 ing after its long summer's work. It has put
 out much strength in blossoms and about the
 leaves and fruit."

"Do the flowers rest, too?" inquired Carol.

"They dry up and die. I have seen them
 all dead," remarked Alex, triumphantly.

"Does *all* the plant die?" A great light came over
 Otto's face. "The roots of some plants are in the ground
 and do not die, and the *seeds* of others," he cried.

"Then the flowers really sleep, too," and Frank looks
 pleased with this discovery. "It tells us in the last
 verse."

"I wish summer would stay all the time," sighed Carol.

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"I think we enjoy it all the more when it comes, because of the winter," said Miss Lawrence. "You know how happy the first violets make us. If we had violets all the year round, we should not care half as much for them."

Every day the children notice the signs of approaching winter. They see that the sky is not as soft and sunnily blue as before, and the winds are colder and from the north. They watch the flocks of wild geese and other migrating birds, and peep at the chattering squirrels storing their houses with the brown nuts.

They bring in the yellowing ferns from the woods, and blow the golden-rod fuzz and thistle-down. The little hands are busy, too. They sew the leaves in outline and paint them,—the green leaf of summer, the golden and red of October, and the brown leaf of November.

Some of the paintings are for Christmas, and will ornament blotters, postal-card cases, and calendar covers for mamma, papa, or auntie. The teacher tells them, also, of the little sleeping seed, and how the warm juices of the soil will finally break the outer envelope, and cause its decay, so the germ may awaken to life in the spring and give us the new flowers. They talk, too, of the seeds of love and kindness in the heart-gardens, and the sunshine of kind words and loving deeds that will make spring up the loveliest of flowers. And they often ask for this song:

THE LITTLE GARDENER.

In my little garden,
When the spring winds blow.
'Neath the soft May sunshine,
Tiny seeds I sow.

In my own heart-garden,
God will plant the seeds;
I must watch and water,
Pull the tangled weeds.

In my little garden
Through the summer hours,
I must weed and water,
If I want the flowers.

Kindly thoughts and actions
From the seeds may grow,
In my own heart-garden
Sweetest flowers blow.

LOVE OF THE BEAUTIFUL IN CHILD LIFE.

BY MISS MARY MOOR, WALTHAM, MASS.

THE love of the beautiful is intuitive in the child's soul. It is an instinct of childhood, just as the belief in Divinity is inborn in every heart, and may be developed into conscious devotion to God and a joy in his service. For instincts and impulses precede conscious thought.

The child's delight in beautiful color and form, in rhythm, in music, and graceful motion, comes with his earliest impressions. Even the baby smiles and crows over a bit of bright ribbon, the swaying of a suspended toy, his rockings and lullabies, and more than all, over the beautiful softness of his own pink fingers and toes.

By and by he will delight in picture books, in drawing and coloring, in singing, in flowers, poetry, beautiful faces and landscapes. These enjoyments are called æsthetic,

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and this word is derived from a Greek word meaning to feel; thus the love of the beautiful is implanted in the heart or the feelings, and belongs to the inner nature, to the spiritual world. It is true that we feel before we know; so that the power and habit of feeling the influence of the soul must and does precede the comprehension of this force, which through culture and development may lead to conscious creative ability.

It is because the child's soul is closely allied to nature that it is so touched and influenced by her varied charms. Watch a little child in the first days of spring as he runs about out of doors. The warm rays of the sunlight, the fresh clear air, the gently swaying leaves, are all full of sweet impressions for the young unconscious soul. So happy is he in this beautiful out-door world that he runs and skips about in pure delight. He does not think or reason about the wonderful influence of the newborn season, he simply feels it a joy to be alive, and expresses this joy in the natural glad activity of childhood.

In the spring that has just passed I saw a little child standing in the midst of a green lawn with both hands full of the young grass-blades, and gazing steadily first at the soft carpet beneath his feet, and then at the contents of his small hands. What were the thoughts that filled that little mind I wonder? If, as Froebel has said, "the first grasping of the childish hands is a sign of mental awakening," perhaps a revelation of beauty had come to

this little one, in the first exquisite green of spring, through this outward grasping of tiny hands.

Something at least of the child's enjoyment of animal life comes through this innate sense of beauty. Observe a child in the midst of a brood of chickens, feeding them, and talking in gentle baby language to inspire their confidence and affection. Does he not delight in this pretty picture of the tender care of the mother hen for her little ones? It is a miniature reproduction of his own beautiful home life, and these small animals are perhaps the only things younger than himself that he has ever seen, and if one of them was not so provokingly beyond his reach he might find it the softest thing his own soft hands had grasped.

It is not hard to believe that much of the child's enjoyment in the chicken family comes through his delight in their downy loveliness.

Not alone on the earth, but on the beautiful blue of the sky, the child grasps to satisfy his longing for the beautiful, and when the darkness comes and the dear little star-lamps are lighted, he is happy in watching them twinkle, and if the "two little horns of the moon should appear," his delight is unbounded. Said a little girl who was taken to the window one still starry night, "papa dear, how pretty the wrong side of heaven is."

We know that harmony is the underlying principle of the beautiful in form, color, and sound. Beauty of form depends upon the fine proportion of parts, the perfect balance

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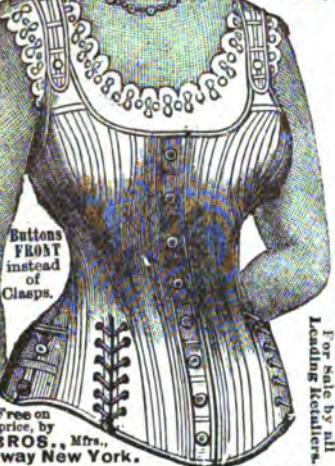
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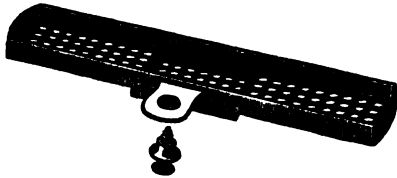
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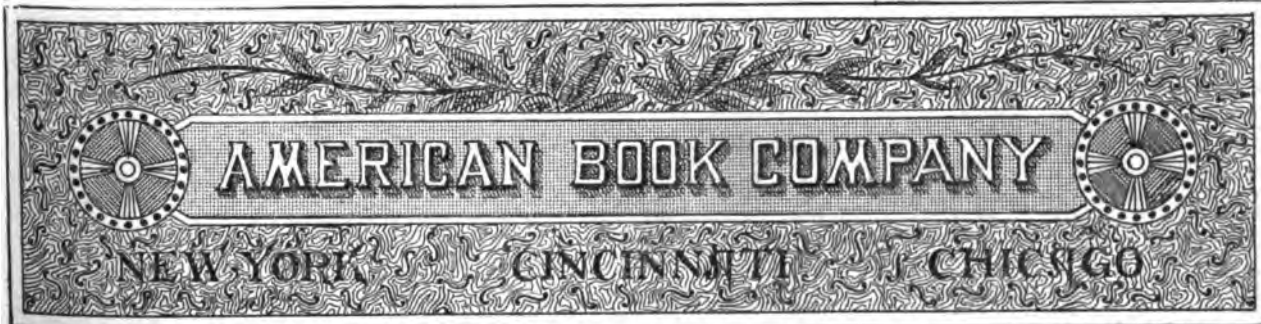
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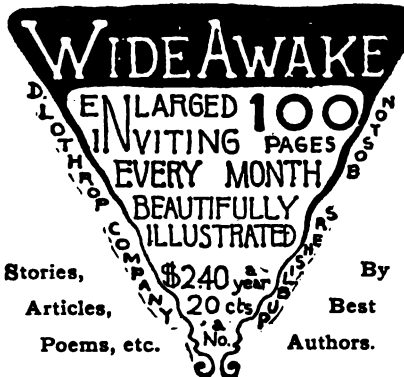
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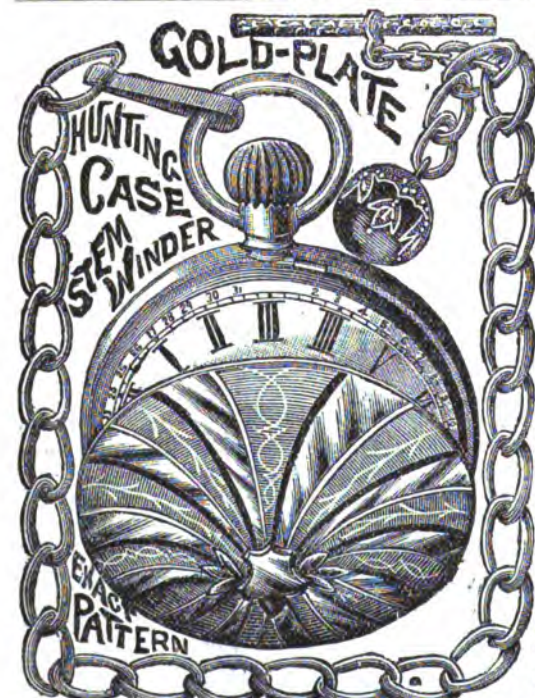
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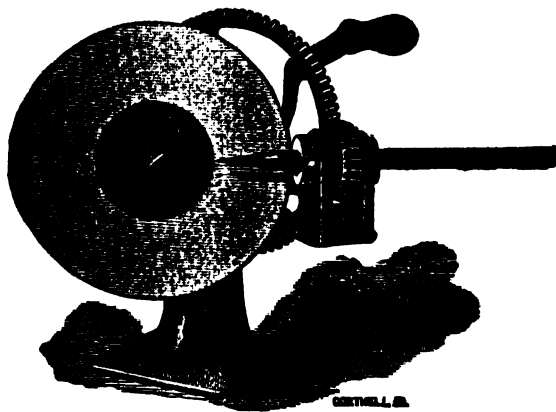
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AMERICAN TEACHER.

VOL. XIV.

DEVOTED TO THE METHODS AND PRINCIPLES OF TEACHING.

No 4.



CHRISTMAS, merry Christmas!
Is it really come again?
With its memories and greetings,
With its joy and with its pain.

O Christmas, merry Christmas!
This never more can be;
We cannot bring again the days
Of our unshadowed glee.

O Christmas, merry Christmas!
Tis not so very long
Since other voices blended
With the carol and the song!

BELLS ACROSS THE SNOW.

HERE'S a minor in the carol,
And a shadow in the light,
And a spray of cypress twining
With the holly wreath to-night.
And the hush is never broken
By the laughter light and low,
As we listen in the starlight
To the "bells across the snow"!

But Christmas, happy Christmas,
Sweet herald of good will,
With holy songs of glory
Brings holy gladness still.
For hope and peace may brighten,
And patient love may glow,
As we listen in the starlight
To the "bells across the snow"!

If we could but hear them singing,
As they are singing now,
If we could but see the radiance
Of the crown on each dear brow;
There would be no sigh to smother,
No hidden tear to flow,
As we listen in the starlight
To the "bells across the snow"!

—F. R. Havergal.

ZACHARY'S FIRST YEAR IN SCHOOL.

(III.)

BY SARAH L. ARNOLD.

IT is Friday afternoon, and the last Friday in the month, too. Miss Soule has promised the children that it should be a very happy afternoon, filled with exercises in which they take especial delight, for it was "star day." They have tried a whole month to be good, especially to be quiet in their work and gentle in their play. And all those who "had tried their very best," Zachary confided to his mamma, were to have a gilt star as a token. "Not like the blue stars we have every week, mamma," he explained; "those mean that we have done our best for a week. But the gold star means our very best for a whole long month. I do hope I'll get one. Miss Soule said everybody had a chance. I don't believe Mike Driscoll will have one. He knocked Tommy Jones down the other day, and I think he did it on purpose."

"Poor Mike," Mrs. Deane says gently, "I'm sure he was sorry that he hurt Tommy. And my boy doesn't know that he did it on purpose, so we will not say unkind things about him. He will feel badly if he has no star. I hope you have earned one, Zachary."

The little five-pointed piece of paper is no insignificant thing to Mrs. Deane. She appreciates all that it means to little Zachary. He has spoken often of it during the month, and has had her full sympathy in his earnest trying "to be good." She knows that he has tried to take care of the restless hands and feet, that they might not disturb the work of his neighbors. And his imperious demands upon his playmates, who seem to accord him the position of leader, might easily become ungentle, if he were not won to love gentleness and accustomed to gentle words and deeds. She had talked with Miss Soule about her plan, and she knew her purpose in it. "I do not want the children to consider the stars a reward of right doing," she had said. "They are *signs* only, which show their parents that they have tried,—though they will not always betoken complete success. They are not like prizes, which only a few may win. They may help the children a little until they become used to trying, and recognize the truth that 'the reward is in the doing.'"

"'Tis a truth we older people are slow to appreciate,"

replied Mrs. Deane. She smiled encouragingly upon the young teacher as she turned away. She knew she could trust her. And Miss Soule went with renewed earnestness to her work because she felt Mrs. Deane's sympathy and approval. What power lies in an encouraging word! What joy in the consciousness that we are not alone in our work!

Zachary is in his place very early this Friday afternoon, this "star day." The other children are as eager as he. Some of them have beguiled their mothers into arraying them in their best dresses, or newly starched aprons. There is an atmosphere of expectation everywhere, which even the dullest observer might detect. What is there in the young teacher that enables her to invest common things with this beautiful halo, and to transform a bit of paper into a coveted treasure? Is it that? Or is she arousing in the little people a consciousness of the power within them, through which they can march from "better up to best"? Truly, the little gilt star is a sign of much that is worth the winning.

The children march in their usual fashion, but for a longer time, because that is one of the promised pleasures. They sing all the songs they have learned this term. They love to sing. Miss Soule sings with them, as happy as they. Then they recite their memory gems,—some of them with the sing-song to which they have been accustomed at home, and which has not yet disappeared under Miss Soule's training.

"Now we will talk about the story we like so well," the teacher says. "Who would like to tell me the name of the story?"

Rob Smith can tell. "It is 'The Village Blacksmith.'" "Who told us the story?"

The children all knew that it was Mr. Longfellow. Daisy is sent to the table to find his picture among the photographs there. The children watch to see if she finds the right one. Yes, she has found it. She shows it to them, and they nod approvingly.

Johnny can find the picture of Mr. Longfellow's house, he thinks; and Mary begs to be allowed to show the picture of the chair which the children gave to Mr. Longfellow. In answer to Miss Soule's questions, Zachary tells what he knows of the poet. He is so eager that he forgets to be abashed by the presence of the superintendent, who has just entered.

"His name is Henry Wadsworth Longfellow. The town where he lived was called Cambridge. He loved little children, and wrote poems for them. Miss Soule, my mamma read me one about a little girl who went to sea with her father. He was a skipper, and that means a captain of a ship. And a big storm came that drowned them all. The next morning a fisherman found the little girl on the shore."

Miss Soule is pleased by the boy's earnestness,—more pleased to know that he is being fed at home. She, too, must read to the children, for many of them will miss all

such helps in their home training. But while she is thinking, the school are reciting at her bidding the "story" which is their delight.

Under a spreading chestnut tree
The village smithy stands.
The smith, a mighty man is he,
With large and sinewy hands,
And the muscles of his brawny arms
Are strong as iron bands.

His hair is crisp and black and long,
His face is like the tan,
His brow is wet with honest sweat,
He earns what'er he can,
And looks the whole world in the face,
For he owes not any man.

Week in, week out, from morn till night,
You can hear his bellows blow,
You can hear him swing his heavy sledge
With measured beat and slow,
Like a sexton ringing the village bell
When the evening sun is low.

And children coming home from school
Look in at the open door.
They love to see the flaming forge
And hear the bellows roar,
And catch the burning sparks that fly
Like chaff from the threshing floor.

The clear young voices continue, until the last line of the poem is recited. The superintendent, meanwhile, questions Miss Soule.

"A little hard for these babies, is it not?"

"No, I think not," she replies. "They enjoy it, and understand much of it. The rest they will appreciate as they have experience, and then will have the advantage of having the poem fixed in their memory."

The little people help her to maintain her position. As she talks with them, their ready answers convince the listener that they have felt the spirit of the poem, besides learning the words. John tells of a field he knows where a "spreading chestnut tree" is growing. Michael brings a chestnut burr, Mary some chestnuts, and Kate a branch with withered leaves to show to Mr. Wouldwell. And Zachary wants to volunteer information gained in a lesson upon the leaves and the burr, but is checked by Miss Soule because there is not time. Instead, he is allowed to describe a visit which the children made to a neighboring "smithy." Michael Driscoll is at home there. He can tell about the flaming forge, the flying sparks, the heavy sledge, the noisy bellows. He has a brother who is a blacksmith. The children have "played blacksmith" in their physical exercises, and they are ready now to "swing the sledge" for Mr. Wouldwell.

They know how the blacksmith looked. They can describe him. Yes, they would like to be like him. They would like strong arms, like his; they can make their arms strong by working, as he did. They would like a kind heart like his; the children loved him. And they would like to "look the whole world in the face." "If you don't do anything that's mean, you can look anybody in the face," Mike Driscoll volunteers; "and if you're bad, you want to hang your head down."

taste. Whatever you may know concerning the defects of other teachers, keep the knowledge sweetly and securely to yourself. Instead of blaming the poorly prepared child or complaining of his teacher, fill in the missing links without loss of time, remembering that children forget, and that similar work must probably be done on your account, sometime, by those above you.

A recitation rises in memory, in which it was too clearly evident that all was not so thoroughly learned as it should be. The teacher, in a disagreeable, brow-beating manner, told a deficient pupil that the point in question should have been learned in a lower grade. This was undoubtedly true; but that the girl was there without having learned it, seemed a thing for which she was not entirely to blame. What the crisis needed was the instant readiness of the teacher to present the point so clearly and concisely that it should be grasped with ease.

Marked distaste and disability for certain branches often goes with great enthusiasm for others. This species of half-dullness suggests the wish that we might specialize in the lower grades more than we do. If a boy is wild over minerals and insects, and finds mathematics a grief without remedy, a humane teacher will naturally seek to encourage the special aptitude, making such sympathy a lever with which to accomplish results in the less congenial branch. He may perhaps be justified in yielding somewhat to this marked individuality, being content with a respectable minimum of mathematics, and not making life a burden to the young scientist because he does not conquer as much arithmetic as his classmate, who enjoys a hard problem next to his dinner. Teaching as a fine art, as distinguished from machine teaching, would recognize differences in the units composing the mass, and while admitting that the weak reasoning power of the un-mathematical student needs strengthening, would respect the natural bent, and give it room to develop.

That thought about the units leads us to look at the child a little as his mother does, remembering that though in our weary moods we may think of him only as the perverse, hopeless occupant of the third seat in the sixth row, he is nevertheless a sacred human personality, into the tissue of whose life we are weaving daily threads, dark or bright. We may call him a blockhead, and deride his unhappy mistakes, if we are cowardly and cruel, or we may invoke patience, and by a wise helpfulness so smooth the path, that he can walk it with little stumbling.

If we run over the list of dull schoolboys that history records, we shall see that they have their place in the world after all. They sometimes come out an immeasurable distance ahead of their masters.

Our dull pupils may never astonish the world, but our fidelity will have its reward, notwithstanding. The schoolroom has no sweeter music than the grateful thanks of the dullard who has been led over the hard places, promoted instead of dropped, by the special help of an earnest teacher. And when, by and by, our work is scanned

by a clearer light than the passing day throws upon it, perhaps no other part will seem so worthy of the words "well done" as these efforts for the dull pupils.

CLASSIFICATION — RECITATION.*

BY ROBERT C. METCALF.
Supervisor Boston Schools,

IN graded schools, so far as may be consistent with the demands made upon the teacher's time and strength, the pupils occupying one room and taught by one teacher should be divided into suitable groups for purposes of recitation and study. Pupils able to push forward at a more rapid pace should be allowed to do so unhindered by classmates less able or less ambitious. Pupils of the former class need more time for individual work and less for recitation than those of the latter.

Recitation, for some pupils, should be only a marking out of work to be performed, while for others the personal attention of the teacher is needed to test, to explain, and to stimulate. The claim so often made that the old country school, with its multiplicity of classes, turned out better scholars than our modern, graded, and more expensive schools in the city, has some foundation in fact. Force of circumstances compelled the teacher of the ungraded school to throw his brighter pupils upon their own resources, and many of them hardly knew what a recitation was like.

The teaching in those days was not always even good of its kind. Many of the teachers were untrained, unskilled, and of doubtful scholarship. But many of their pupils *did* learn what very many of ours do not, — self-reliance, without which success is never possible in any occupation.

Such exercises as music, drawing, writing, and the like may be taught in large groups; but from necessity of grouping arithmetic, geography, history, and grammar can be pursued more advantageously with pupils arranged in smaller groups.

Let the teacher study the needs of his pupils, and so arrange their work as to require the least possible of what may be termed "marking time," and the greatest amount of individual exertion. At the same time let the teacher dismiss from his mind all anxiety in regard to what particular class or grade his pupils may be fitted for when they leave his room. Let him follow the prescribed course of study with each of his groups to the extent of the pupils' ability, and to the limit of the time which they spend under his instruction.

It is claimed that it is impossible for one group of children to prepare a lesson while another group is engaged in recitation. But this is a matter of *habit*, and good habits are the result of good training. The habit of concentration is one of the most important for an one

* From Report of Supervisors of Boston, Mass.

and say no more. Whatever reproofs you give, let them be in private. Do not make punishments too heavy, but make them sure. To give one thousand words to write, or an hour to make up is absurd. Fifty words for an offence are enough, and they should be done as well as a child can write. Never take poorly done work. Remember that a successful hunter accommodates his ammunition to the game he hunts. Fit your punishment to offence on the same plan. If you give the heaviest penalty for whispering, how shall you distinguish disobedience, unkindness to schoolmates, obscenity, and profanity? Never let an instance, however trifling, of disobedience pass without some private reproof. It is the surest cause of a bad school. Do not call that obedience which needs the teacher's presence to insure it. Exact as full compliance to your orders when you are away as when you are in the room. If you require it, you will have it.

Be polite to your pupils though they be ever so small. They will obey you with a willing heart if they feel that you respect their tiny personalities. You will receive respect in greater measure. The nearer the teacher gets to the children in seeing school matters, the easier will government come. In fact, the discipline will take the line of directing on the teacher's part, and the children will govern themselves.

These six rules hold the secret of all good discipline:

Govern yourself first.

Say little, and mean every word.

Be firm and gentle.

Put yourself in your pupil's place.

Be polite, and require politeness to you and to your pupils.

Strive to be right. If you have been wrong, be willing to admit it. If you are ashamed to say that you were not right, how can you expect your pupils to be wiser? They know if you are wrong, and will respect you the more for admitting your error, unless you do it often. Strive for perfection. You will never find it, but in the effort you will gain, and you will have helped your little folk to be better men and women, which is the highest part of the teacher's work. Keep before you and yours this motto from Canon Farrar: "There is only one real failure in life possible, and that is, not to be true to the best one knows."

GEOGRAPHY TOPICS.

FRANK B. WILLIAMS, MARQUETTE SCHOOL, CHICAGO.

- | | |
|----------------------------|----------------------|
| 1. Location. | 7. Water, Bodies of. |
| 2. Direction from us. | 8. Education. |
| 3. How reached. | 9. Government. |
| 4. Surface and Climate. | 10. Religion. |
| 5. Soil and Products. | 11. Cities. |
| 6. People and Occupations. | 12. Facts. |



THE HOUSE WE LIVE IN.

BY MARY L. SAWYER, BOXFORD, MASS.

Granite, Mica, and Feldspar.

HOW many children know what granite is? If you live in the city you have all your lives seen the granite curbstones. If you are country children, this gray rock is probably common near your house, or perhaps you have visited some quarry where the great blocks of stone are blasted out.

Here is a piece of rough granite. What is its color? Gray, or white-gray, you will say at once. But some of you will look a little closer, and will see *three* colors in this rock, and some very bright-eyed child will find that the different colored parts differ in other ways, too, and that one is very hard while another is quite soft.

Granite, then, is made of three minerals. Let us find out their names. First, comes this hard, glassy substance that we already know as quartz. Its color in granite is usually a smoky tint, but we know it by its hardness whatever the color:

Next try these little, soft, black specks. Put a pen-knife blade or a pin carefully into one. Off comes a little thin shaving from the black mineral.

Try again. There comes another sheet, and you could tear away sheet after sheet, precisely as you tear sheets of paper from a writing block.

This is mica. It is found in large pieces, sometimes almost as transparent as glass, and it can always be divided into thin layers, like this (Fig. 1). It is so elastic that it may be bent nearly double without breaking. By these two tests you may always tell mica, though in your piece of

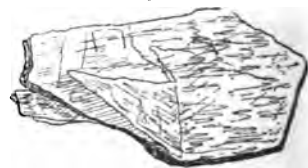


FIG. 1.

granite it may be light colored instead of black. How many have noticed the little spangles that glisten in the sand of the road so brightly when the sun shines? These are bits of mica. Because it is so tough and elastic and can be split into transparent sheets as thin as paper, it has been used for window glass. The little doors in stoves, through which you watch the flames dance, are made of mica.

Now look again at our piece of granite. What is this light-colored mineral, so abundant that at first sight you hardly noticed the quartz and mica? Almost half the granite is made of it. We test it first for hardness. You cannot scratch it with your knife, but if you had a piece

of quartz you could scratch it a little with the quartz. So we say it is not as hard as quartz, but comes next to it in the scale of hardness.

Next, hold the granite so that the light will strike upon

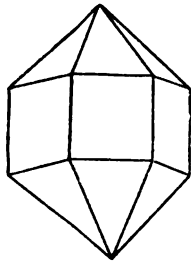


FIG. 2.

it. Now you will see the great difference between this crystal and quartz. See the bright reflection from these *smooth, polished* faces. This is feldspar.

You remember how the crystal of quartz looks (Fig. 2). A

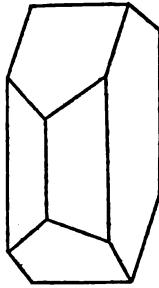


FIG. 3.

crystal of feldspar would look like this (Fig. 3). Wherever you find feldspar you will notice this polished, shining face, because feldspar always breaks in this way.

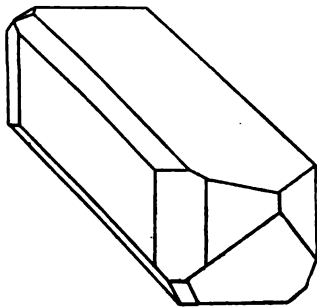


FIG. 4.

We call this regular breaking into smooth faces, cleavage, and we say quartz has no cleavage, because it breaks unevenly, as you see in the granite. Feldspar breaks easily in two directions, and you will often find its large, thick, prisms (Fig. 4).

Some of these feldspar

faces look a little scaly, as if they might be separated like mica. Try the knife-blade upon them and you find this impossible.

Feldspar is not quite as heavy as quartz. It is very abundant, its common colors being flesh-red or whitish. There is a very clear, pure-white kind, and a beautiful green is found on Cape Ann. The moonstone is a variety of feldspar. Porphyry rocks owe their beauty to crystals of feldspar scattered through them (Fig. 5). When you climb over the great felsite rocks by the ocean you can test their hardness, for they are almost pure feldspar.



FIG. 5.

And, lastly, clay beds are made chiefly of decomposed feldspar, so when you walk over brick sidewalks you are walking on a feldspar road, for bricks are made of baked clay. How many other things can you think of that are made of clay?

The point is not to reach a certain place in the textbook at a specified time, but to train the pupil to do well and intelligently certain essential things.

FIRST STEPS IN LANGUAGE DEVELOPMENT.*

BY HARRIET A. LUDDINGTON,†

Principal of Training School, Pawtucket, R. I.; author of "Picture Problems."

IV. — Nature Lessons: Animals, Plants, Natural Phenomena.

NEXT to stories, in point of interest to the child, we may place *observation lessons* upon animals and plants. Side by side with these should be ranked talks on observations of natural phenomena and elementary lessons in physics.

Even the most silent child will awake to interest and talkativeness over the cunning squirrel or other pet, which should be one of the treasures of the primary schoolroom. Great enthusiasm, too, may be aroused by watching the awakening of life in the little seeds planted by the child himself, or by observing the unfolding of buds or the growth of twigs, either in the schoolroom or out of doors. Little talks, on "the way the moon looked last night," or "how those dear little rain-drops came to be overhead and why they fell," or "in what direction Johnnie's shadow pointed when he went home at noon and when he came back; on which side of him he saw it, each time," etc., lead to immediate interest in nature observations. A little physics lesson, in which experiments with the candle give information concerning some effects of heat, will delight even the youngest beginner. In these earliest lessons the main object is to discover what power of observation the children already have. The first point to be attained is to lead the pupils to tell just what they see in the object placed before them; the next to get them to tell what they know from previous observation.

Sometimes, a novel way of suggesting the point to be talked about, incites the children to show more knowledge than one would suppose they possessed. Suppose, for instance, that the teacher says, "I think our little plant must be hungry. Let us feed it with some of our squirrel's nuts."

Immediately every child will be earnestly and anxiously assuring her that plants cannot eat nuts as squirrels do, and will, very likely, pompously inform her what plants *do* need. In the animated conversation which is sure to follow, the teacher may leave with the pupils the question, whether or not nuts could in any way be made to nourish plants. In a day or two some child will be sure to think of the decaying nuts under the trees in the woods,—of the character of the soil where decayed nuts and leaves are found, and of the effect of such soil on the growth of plants. From this starting point numberless beautiful lessons will naturally grow. Similar talks concerning animals may easily be developed. The teacher whose eyes have been opened to the wonderful possibili-

(*Copyright, 1889.)

†Formerly Training Teacher at State Normal School, New Britain, Ct., and at Cook Co. (Ill.) Normal School.

deficiency in herself. Her manner was far from winning. She was conscientious, but lacked judgment. She was so sure that she was right, and so zealous in attaining her ends by her own method, that there was danger of serious mistakes wherever she erred. Naturally, her ways and means differed widely from Miss Soule's. The bewildered children became more and more puzzled as the day went on. They were told to study their lessons and be quiet; but they had no lessons to study, nor would they have known how to study had lessons been assigned. Accustomed to varied work, they could not relapse at once into quiet idleness. Suppressed giggles came from an unobserved corner. Sammy Smith had drawn a funny picture on his slate, having nothing else to do. Miss Straight was tired, with the haphazard, uneven, unfruitful work of the morning. She meant, too, to "begin as she could hold out," and "have the children mind from the beginning." She approached the unconscious group in the corner. Little Zachary was leaning across the aisle, intent on the picture which was in progress on Sammy's slate. He was all unaware of Miss Straight's approach, all innocent of any willful transgression. He was roused from his unconsciousness, however, by a blow upon the ear. As he turned his face to see whence the blow came, he received another upon his cheek.

He did not know the reason for the assault. He did not stop to think. He felt like a young tiger as he sprang to his feet with crimson cheeks and flaming eyes, crying: "You bad, bad, woman! You wicked teacher! You had no right to strike me! You —!"

But his voice was stopped by the teacher's hand. She could not endure such impudence. She had never seen a naughtier child. Zachary struggled to free himself, resenting in every nerve and fiber the indignity to which he felt himself subjected, and the name he felt he had not earned. The contest between the excited child and the determined teacher became more and more serious. Feet and hands and voice struggled for independence; but Miss Straight had vigorous muscle and undaunted will, supported by a clear conscience. As Zachary weakened, she slapped him vigorously, in token of assured and victorious authority. Unable to fight any longer, Zachary sank into his seat, and hid his face as he sobbed silently. He tried to check the sobs, but his little frame shook with resentment. Miss Straight thought him conquered,—he was simply silenced. She had brought into recognized manifestation the spirit that had slumbered through all his former school life. The child quivered in the power of a fierce temper, which her error had grievously strengthened.

With the dullness of comprehension that had characterized her morning's work, Miss Straight appended her *Hæc fabula docet*. "Zachary was a very naughty boy," she asserted, with solemn emphasis. "You see that he had to be punished. I shall punish every naughty boy that I see." The children, who had watched the proceed-

ing, startled into silence by so strange an event, now glanced furtively about the room to discover who was likely to be seized next. Miss Straight had spoken as if she knew several naughty children. This, too, was foreign to the atmosphere of that schoolroom. Miss Soule had looked for good boys, and had found them.

The tardy noon found Zachary with his face still hidden. He slid into his place in the line, and walked quietly out with bowed head. Not until the child had left the room did Miss Straight discover that he held his book and slate under his arm. She called to him to come back, but he fled like a deer, never once looking back till he reached the door of his home. He burst into the room where his mother sat reading, and flung his precious slate and book upon the floor. "It wasn't true, what she said; and she isn't good; and I never, never, never will go again!"

Poor little Zachary and poor Miss Straight! Both with lessons hard to be learned set before them; both in need of wise help. Well for the little lad that he could sob out his grief in his mother's arms, and tell his trouble to one who could understand.

THE ACORN.

THE oak produces comparatively few seeds; where it produces a hundred seeds, the ash and maple will yield a thousand, the elm ten thousand, and many others a hundred thousand. The acorn has no provision made by nature, like other seeds. Many kinds have wings to float them on the water and carry them in the air, the wings placed in such a manner as to be carried by a rotary motion, reaching a wonderful distance, even in a very light wind.

Nearly every tree-seed, except the acorn, has a case to protect it while growing, either opening and casting the seeds off to a distance when ripe, or falling with them to protect them till they begin to germinate. Even the equally large seeds of other kinds are protected in some way.

The hickory nut has a hard shell, which shell itself is protected by a hard covering until ripe. The black walnut has both a hard shell and a fleshy covering. The acorn is the only seed which is left by nature to take care of itself. It matures without protection, falls heavily and helplessly to the ground, to be eaten and trodden on by animals, yet the few which escape and those which are trodden under are well able to compete in the race for life.

While the elm and maple seeds are drying upon the surface, the hickories and walnuts waiting to be cracked, the acorn is at work with its coat off. It drives its tap-root into the earth in spite of grass, and brush and litter. No matter if it is shaded by the forest trees so that the sun cannot penetrate, it will manage to make a short stem and a few leaves the first season, enough to keep life in the root, which will continue to drill in deeper and deeper.

METHODS

THE HOUSE WE LIVE IN.

BY MARY L. SAWYER, BOXFORD, MASS.

Crystal Formations.

JANUARY is a bad month for mineral study you think. The ground is covered with snow and all rocks are hidden. Suppose we experiment a little and see what we can find out about crystallization. Winter is our best time.

Look out of the window this frosty morning. Oh! you *can't* look through! The pane is covered with delicate tracery that Jack Frost has drawn. These lovely, feathery lines, are made of tiny crystals, placed one after another all over the glass. Open the window or go out of doors and catch some of the snowflakes as they come

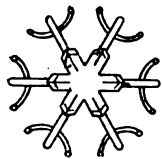


Fig. 1.



Fig. 2.

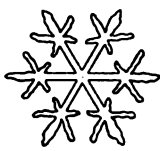


Fig. 3.

sailing down. See, they are perfect little six-pointed stars,—Figs. 1, 2, 3. People sit up all night to watch for “star showers,” but here is a shower of most exquisite stars that very few take the trouble to study at all.

Water is a mineral just as much as quartz is, and these snowflakes are the water crystals. Another and a most delightful way to study water crystals is to visit some little brook or pond, break the mass of crystals we call ice and look at the treasures underneath. Ask your teacher to read very carefully Lowell's poem, “Sir Launfal,” and then to show you how

“Every image that mirrored lay,
In depths serene through the summer day,
Has been mimicked in fairy masonry
By the elfin builders of the frost.”

As you break off the curious shapes, or look down the bank under the ice cover, try to find the “silvery mosses,” the “ice fern leaf,” the “frost leaved forest-crypt,” and all the other “summer delights” the brook has hidden safely away.

There are crystals everywhere, you see. Water cannot become solid without crystallizing any more than iron or gold can. We will see if this is true of other substances. Take a tumbler half full of hot water, and dissolve in it as much salt as the water will absorb. Try the same thing with alum, and again with sugar, and study the forms it finally crystallizes into.

Look at a broken piece of cast iron, of marble, and of granite. They are all made of crystal grains. The iron was melted in the furnace, and crystallized as it cooled or hardened. The granite crystallized in much the same way, but it was heated in the great earth furnace before man came into the world.

We have here three ways in which crystals are formed. The iron had been melted in fire,—that is, it was in a state of *fusion*; the snowflakes were formed from *vapor*, and the salt crystallized from a *solution*. None of these are single crystals but a collection of many.

But every single perfect crystal has its own form, which distinguishes it from every other just as distinctly as this



Fig. 4.



Fig. 5.

oak leaf (Fig. 4) is distinguished from the maple leaf (Fig. 5). This does not mean that a mineral always crystallizes into the same shape. You can hardly find two maple leaves exactly alike, but

you will not mistake any of them for an oak leaf.

Here are two crystals of iron pyrites (Figs. 6 and 7). They would represent crystals of salt equally well, or crystals of lead ore, for all these are in the same *system*; that is, their crystals take the same forms. These two figures look very unlike, but let us experiment again. Take a piece of raw potato, or any other substance that will cut easily, and make a cube like Fig. 6. From the top to the bottom, or from any face to the opposite one, the distance is the same. Pierce the cube in these three directions with strong needles of equal length,

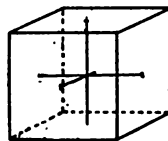


Fig. 6.

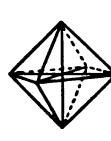


Fig. 7.

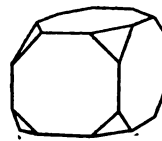


Fig. 8.

and measure for yourself. Now, very carefully, cut equal, even slices from the eight angles of your cube. It will then look like this (Fig. 8). Cut larger slices from the same places, and you will have Fig. 9. One more slicing will give you Fig. 7, and though its shape seems so unlike the cube, its three measurements are exactly the same, as you can tell by the needles which now connect the six points or angles of your new figure. You have changed the shape; you have not changed the crystal from one system to another any more than you would change the maple leaf to an oak leaf by drawing another maple leaf very unlike the first one.

But if you cut off a *side* of your cube so that it looks like Fig. 10, a crystal of tin ore, or like Fig. 11, a kind of copper, you have changed your system, because you

She enters the room properly, bids the children "Good morning," and takes a seat.

She rises, takes a book from the table, and passes it to a pupil in the right manner.

Children are imitators, and many acts of politeness and courtesy may thus be taught incidentally. If the pupils do these and other successive acts which are described by some member of the class, they are learning grace of movement while learning correct forms of language. Besides seeing and describing the actions of members of the class, the pupils should watch and describe the movements of animals; practice in this leads children to become interested in observing the habits of different animals.

Example: Yesterday my little kitten was crying and following me about the house. I gave it some milk, which it lapped, and then lay down on the rug and went to sleep.

These "action lessons" make it necessary to use many different verbs and different forms of verbs, thus giving the teacher opportunities for the correction of common errors.

Giving attention to actions for the purpose of description differs from the attention given to objects. With the latter there was time for investigation whenever the ideas were not sufficient to give a clear thought, but actions must be noted instantly, and if the mind does not recognize them quickly and accurately, it is indicated in the vague expression or the incomplete sentence.

WORDS NEVER KNOWN TOO WELL.

BY GUSSIE REINSTEIN, SAN FRANCISCO.

rood	rude	poll	pole
feign fain	fane	fort	forte
throw	throe	quay	key
plum	plumb	meat meet	mete
jam	jamb	wrest	rest
draft	draught	rye	wry
knit	nit	choose	chews
hew	hue	birth	berth
fir	fur	dough	doe
whirl	whorl	flew	flue
bow	beau	groan	grown
break	brake	wholly	holy
frays	phrase	links	lynx
wear	ware	yolk	yoke
tear	tare	right rite	write wright
slay	sleigh	wretch	retch
quartz	quarts	rowed road	rode
weighed	wade	route	root
waist	waste	moan	mown
damn	dam	pique	peak
skull	scull	rice	rise
sleight	slight	corps	core
stayed	staid	cruise	crews
aisle iale	I'll	hoard	horde
brooch	broach	muse	mews
caste	cast	cite site	sight
cannon	canon	fate	fete



THE CHILDREN AND THE POETS.

ARRANGED BY KATE L. BROWN.

CELIA THAXTER.*



Celia Thaxter.

THE SANDPIPER.

A CROSS the lonely beach we flit,
One little sandpiper and I;
And fast I gather, bit by bit,
The scattered drift wood, bleached and dry.
The wild waves reach their hands for it,
The wild wind raves, the tides run high,
As up and down the beach we flit,
One little sandpiper and I.

Above our heads the sullen clouds
Soud, black and swift across the sky;
Like silent ghosts in misty shrouds,
Stand out the white lighthouses high.
Almost as far as eye can reach
I see the close-reefed vessels fly,
As fast we flit along the beach,
One little sandpiper and I.

I watch him as he skims along,
Uttering his sweet and mournful cry;
He starts not at my fitful song,
Nor flash of fluttering drapery.
He has no thought of any wrong;
He scans me with a fearless eye:
Staunch friends are we, well-tried and strong,
The little sandpiper and I.

* Arrangements have been made with Messrs. Houghton, Mifflin, & Company for the use of this poem and portrait.

Comrade, where wilt thou be to-night
 When the loosed storm breaks furiously?
 My drift-wood fire will burn so bright!
 To what warm shelter canst thou flee?
 I do not fear for thee, though wroth
 The tempest rushes through the sky;
 For are we not God's children both,
 Thou little sandpiper and I?

For the children.

I know that you will be glad to learn Celia Thaxter's "Sandpiper." When I was a little girl I found this sweet poem in my favorite *Young Folks*, now your *St. Nicholas*. I remember feeling very sad over the lonely little bird, who had no warm drift-wood fire, in the cold storm. And I can never read it, even now, without just the same feeling the child had. There are many pictures in this poem. See if you can describe each to your teacher.

Celia Thaxter was born in Portsmouth, N. H., June 29, 1835. Her father, when she was quite a little girl, accepted the position as keeper to the lighthouse on Star Island, one of the Isles of Shoals, just off the New Hampshire coast. There the little Leightons (for that was their name) lived a free, out-door, happy life. The Isles of Shoals are wonderful islands. People who love them, think that nowhere are the sunsets more gorgeous, the flowers deeper tinted or more profuse.

Little Celia was as hardy and active as a boy, but there was one quiet employment that she loved,—she was never weary of writing poetry. Ever since those early days, her pen has been busy, and the children owe many of their favorite poems to her. When quite young she married Mr. Thaxter, but much of her life has been spent on her loved islands. You remember "Little Gustava," "Piccola," too, the story of the sweet little French girl who put out her shoe on Christmas Eve, and found a shivering little bird in it the next morning? That is from Celia Thaxter. "A Triumph" and "Rescued" are also hers. Look them up, if you do not know them already.

A few years ago a portrait of Mrs. Thaxter was exhibited at the Boston Art Club. It represents her as tall, large, and stately, with a fine, strong face crowned with abundant, gray, rippling hair. She is the mother of two sons, and must be tender to the children, as we remember one verse in the "Slumber Song":

"Dear little face, that lies in calm content
 Within the gracious hollow that God made
 In every human shoulder, where he meant
 Some tired head for comfort should be laid!"

For the teacher.

This poem may be made very living to the children, if presented to them with loving sympathy. It presents a series of exquisite little word-pictures that children from eight to ten and older may readily appreciate. The humanitarian feeling in it is strong, likening the bird to a brother and comrade, since,—

— "are we not God's children both,
 Thou little sandpiper and I?"

The fearlessness and trust of the wee bird are well shown. Impress upon the children that wild birds who know not what ill-treatment means, are nearly always friendly and trustful. Tell them about drift-wood, its beautiful colors when burning, and why. Why do the "wild winds reach their hands for it"? Describe the coming in of the tides. What do you mean by "flit"? by "sullen clouds"? Why are they "sullen"? Describe the lighthouses. What do you mean by "close-reefed" vessels? What does "stanch" mean? What kind of friends are "stanch friends"? "fitful"? Why are the sandpiper and Mrs. Thaxter "comrades"? Describe the "loosed storm." Why does not the writer fear for the little sandpiper? Ask the children to tell the story in prose.

"BUGS AND THINGS;"

OR,

Fred and Ethel at the Brookside.*

I.—WATER TIGERS.

ETHEL gave a jump, also. She opened her eyes and found herself sitting on the stone by the brook, and the skaters were rushing as madly as ever.



"Poor little ladybug," she sighed, "I can't help being sorry for her, though she *was* saucy. Oh, here comes Fred!" and away she ran to meet her cousin.

Fred laughed at the funny dream. "They *do* eat ladybugs," he said; "the little things have a hard time of it. Now come across the brook on this log. There's a famous place for tigers just above. You'll like them as well as the skaters."

In a few minutes Fred brought up his dredger full of queer things. "Hold the pail quickly!" he cried; "I have three or four, sure. Now look at them; they are perfect wretches."

"Why, they look like beetles!" cried Ethel.

"Yes," said Fred, "they have the same thick body. I suspect they are called tigers because they are so blood-thirsty. Uncle and I had some in a glass jar last season. We fed them with worms. Three or four of them would get hold of the same worm, and tug and pull until it was all in bits, and they would fight for a bit half an inch long. The larvæ or baby tigers have three claws on each side, and a pair of jaws like scissors. They just make it lively for the baby polliwogs. They snip off their tails and suck the juices out of them in less than no time. We can't keep several tigers in one bottle long. They fight and fight, until only the strongest is left. You see, Ethel, the larvæ are like worms at first, worms without wings. After a time they bury themselves in the mud, stay there a little while, and come out real tigers, with wings that they fold up as beetles do. I have watched them float on

* The writer is greatly indebted to *Up and Down the Brooks*, published by Houghton, Mifflin & Co.

the surface of the water, and they have a way of folding their hind legs up over their backs. They will stand on their heads at the bottom of the jar, and there will be a shiny round bubble of air at the other end."

"I think water-tigers are interesting," said Ethel, peeping into the pail.

II.—WATER SCORPIONS.

"Ugh!" said Ethel, bending over Fred's bottle with interest; "of all the frightful creatures you've shown me, this is the worst. What do you call him?"

"That is my water-scorpion," said Fred, reproachfully; "one of the most lovely and interesting of the inhabitants of our brook. Hal Stanley and I captured him while you and Miss Daisy were dressing your dolls."

"We were arranging our pressed flowers," replied Ethel, with dignity.

"I cannot say that your water-scorpion is beautiful, but he certainly is interesting."

"O! Ethel," said Fred, gravely, "how can you look upon him and call him hideous? See that peanut-shaped body, with its four three-jointed legs. Look upon that needle-like tail! Behold those nippers, like unto a crab's! You should have seen how the old villain clung to the dredger when we hauled him up. We had some scorpions last year that would have amused you. The female bears her eggs on her back, and the egg mass is often as big as she. Uncle counted one

hundred and twenty-six on one scorpion's back alone. Some of the scorpions had a cluster on the shoulders. The babies when first out of the egg were like little squash-bugs. They used to keep near the surface of the water, standing on their heads. The old ones like to get hold of a chip and float around on it like a raft."

"What a fierce-looking creature this is!" and Ethel stirred him up with the end of a pencil.

"He looks awful for his size," laughed Fred. "But I rather think those threatening actions come from fright more than anything else. Come away now, Ethel, and help me arrange the orchids Hal and I found."



Subjects for Composition.

[We would gladly credit the following, but we find it in an exchange credited "Ex."]

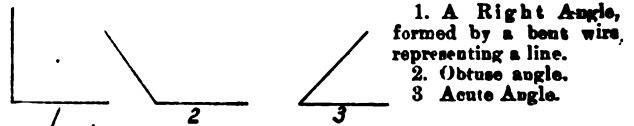
How to Take Care of a Canary; How to Set the Wickets for Croquet; How to Shoe a Horse; How to Set a Table; How to Make a Bed; Name the Players in a Base-ball Game; What are the Requisites for a Good Catcher? a Good Pitcher? Name the Good Points of a Horse; Tell How to Harness a Horse; Tell How to Make a Kite; How do you Fly a Kite? Tell How to Build a Fire.



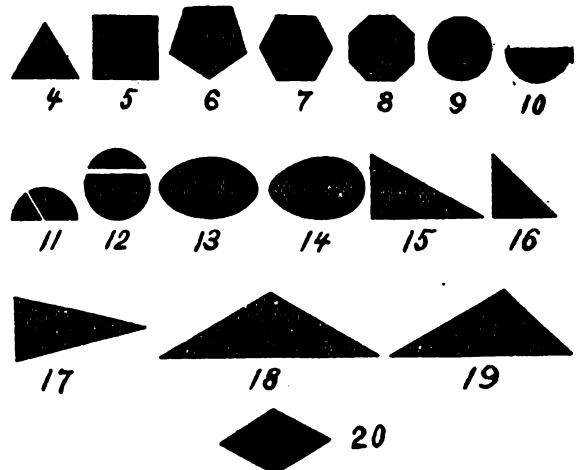
ANGLES, SURFACES, AND SOLIDS.

WE here present the various angles, surfaces, and solids with which school children should be made familiar early in their course. These should not be taught in a series of consecutive lessons, but the teacher should know which they know and how well they are known. Definitions are of the least account. They must know them at sight, and must be able to tell what each is by name and by its distinguishing characteristics.

Form study is now so prominent a feature of school work that the methods will be very generally understood. The class should handle the bits of thin pieces of board (4 to 20) and the solids [21 to 44] from the first year of school life. They can be purchased for a ridiculously small sum. The solids are accurately and neatly made from well-seasoned hard wood, and the surfaces from very hard light colored board, cut with steel dies. They can be ordered of J. L. Hammett & Co., or Prang Educational Company, Boston; or Milton Bradley, Springfield, for \$2.00, postage, 40 cents extra.



The first thing taught is the sphere. He knows this from the marble, the ball, the orange, etc. The idea is that it will roll in all directions. The cylinder is to be taught next, it will roll in one direction but not in the other. The end is a circle. The cube is next in order and with it comes the square, straight lines, corners, angles, right angle. Thus the work develops.



Fred.—And there is no more government land so far east, so you couldn't take a timber claim if there were forests. But you can find large forests by going north into Minnesota or Michigan.

"I travel west and reach the Pacific coast. What can I invest in?"

May.—Timber in the north.

Lena.—You can raise sheep, or potatoes, or apples, and many other things in the north besides timber. You can have a farm.

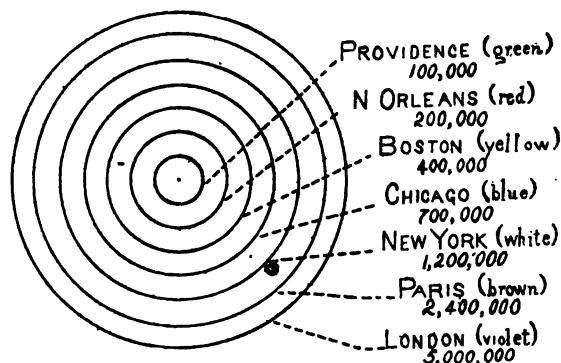
Will.—You'd better invest in California, and go into fruit. I'm going to have a prune orchard when I invest.

DEVICES IN GEOGRAPHY.

GLEANED BY E. A. FANNING.

I. *Device for Teaching the Comparative Size of Cities,*
by Miss Stella Hall, Somerville, Mass.

Indicate by circles of vari-colored crayon. These are preferable to straight lines, which may show proportion, but do not seem to include territory as circles do. As



will be noticed, the population is double, or nearly so, in each case.

II. *Device for Showing Religious Bodies on the Globe.*
Color each division.

III. *Device for Showing Comparative Size of Countries, etc.*

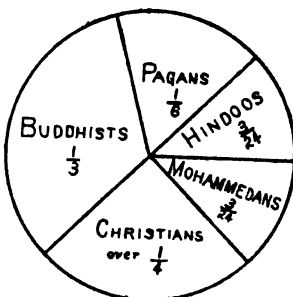
1. Draw Maine, New Hampshire, and Vermont. Explain that they are the size of England.

2. Draw Massachusetts. In size it equals Belgium.

3. Draw New England.

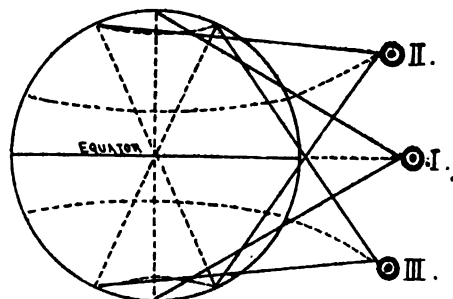
Explain that the population of London and its suburbs equals that of all New England.

4. Make old maps useful by pasting cheese cloth or cardboard upon the backs. Trace Texas, Australia, Massachusetts, New Jersey, California, France, and other states and countries upon colored paper, cut out, and keep to place upon different portions of maps, to compare



size, etc. Nothing fixes important facts so ineffaceably as does comparison.

IV. *To fix Equinoxes, Solstices, etc.*



1. Vernal and autumnal equinoxes, March and September. When the sun is vertical at the equator, covering one half of the earth, the days and nights are equal. (Represent vernal equinox by triangle of green; autumnal by brown.)

2. Summer solstice, June. The sun at the Tropic of Cancer, $23\frac{1}{2}^{\circ}$ north. (Represent by triangle of red.)

3. The sun at Tropic of Capricorn, $23\frac{1}{2}^{\circ}$ south. (Triangle of blue.)

Use to illustrate seasons, length of day and night, etc.

DEVICES IN LANGUAGE.

BY MARY O. TEBAULT.

1. Give frequent instruction in short sentences on blackboard, and have all pupils copy the same.

2. Write words on blackboard, and let pupils write sentences, bringing them in, thus showing their use.

3. Have dictation sentences written on slates, — the teacher examining each slate carefully.

4. Have constant drills in the four classes of sentences, and the closing mark of each.

5. Write sentences on blackboard, leaving blanks for the verbs *is*, *was*, *are*, and *were*. Have the blanks filled by pupils on their slates, and try to explain clearly why each is used. Make pupils say whether the nouns used with them mean one or more than one, and endeavor to impress upon them the necessity of reading silently every sentence that they write.

Use *is*, *was*, *are*, or *were* in the following blanks :

The dog — barking.

The dogs — barking.

— the child sick?

The children — sick.

6. Teach the verbs most frequently used, but dwelling longest on the verbs *sit* and *sat*. Make the pupils understand that *sit* means to rest or recline, and *set* to put or place. Give many examples of their use.

Your dress sits well.

Set the lamp on the mantel.

The inkstand sits on the desk.

Set the table.



ALLAN DALE will have charge of this Department, but the questions will be answered by a variety of teachers of various grades. We have been in the habit of answering such questions by personal letters, or sending them to teachers to answer, but hereafter they will be answered through the AMERICAN TEACHER.

Why do you look in the west for fair weather?

INEXPERIENCE, Mt. Vernon, Me.

Simply because in New England, and the East generally, the weather, good or bad, moves eastward. Note the weather prophecies in the papers; they record the storms or fair weather from Manitoba to the coast. On the Pacific Coast they do not look in the West for fair weather. Each great section of the country looks for fair weather in the direction from which the storms come.

Is it better to have recitation-room separate from study-room? Why? Would it be well to have our school-houses built with recitation-room separate from main room?

G. W. C.

It is usually impracticable to have recitation-rooms, but where there are assistant teachers it is a necessity. It is hardly a question of what is best. We must fall into line with the necessities of the case based upon the conditions.

In asking the question, "What do you consider proper books for pupils from twelve to sixteen years old to read? Name five," twenty per cent of the answers included the Bible. What do you say in regard to the Bible?

Park River, No. Dak.

Of course this answer was not expected. The Bible is a library in itself. The specific books should have been mentioned. There is very little of the Bible that can be profitably "read" by children of the age you mention. The reading of a chapter a day, or a few verses, can in no proper sense be called *reading* the Bible. It is using it for worship. There are many chapters that can be used with profit by children.

Is it best to oblige scholars in the small village schools to speak pieces and write compositions when it has not been done for years, and all are opposed to it?

V. B. S., Maine.

I dislike the word "oblige" and do not enjoy the terms "speak pieces" and "write compositions." But that for which these stand ought all the more to be done, because they have not been done for years and because all are opposed to them. There is much more need for such work in a small village school than in the city. You must be discreet and work up the more informal phases of

the work. No week should pass in which pupils do not memorize and repeat before the school some choice bit of literature. With little children these are "gems"; later, they are "selections"; with older pupils, they are "pieces." No day should pass in which they do not write in their own way something for its language effect. These, with the older pupils, become "compositions." It will be difficult, at first, to do satisfactory work in such a school as you describe.

How often should a teacher be re-examined?

A. K., Ohio.

The law of a state usually provides for this. When one has a life certificate, he is never re-examined. Some states provide for one, two, and three year certificates. The certificate given always tells when another examination must take place.

Will you please tell me how to teach penmanship in an ungraded school, both to primary pupils and to advanced. They have copy books. And do tell me what work I should give from the board, and how much of the theory I should teach.

C. H., Elk County, Pa.

It is very difficult to tell you how to do this,—is practically impossible. The latest method of securing good writing is to learn to write by writing. From the first week in school the little children write sentences. Copy books are rarely used in the lower grades, and when used are for the movements, freedom in the use of the hand. The blackboard work should be simply for direction as to the use of the hand and arm, for muscular control, for graceful use of the forearm, wrist, and fingers, rather than for the dimensions and slant of the letters. We will publish an article or two on penmanship in an early issue of the TEACHER.

How can I get clay for form work?

AN AMATEUR

Any kind of clay will do. Sift it to get the stones and hardened parts out; sift or wash it through a sieve three or four times so that it is perfectly free and clean, then it will work almost like putty. It is not the kind of clay, but the care with which you prepare it that is important. Moisten just right when you come to use it.

In reading numbers, as 5,063,295, do you say five million or five millions? Why?

Karolyn, Ct.

Say five million, just as you say sixty-three thousand, two hundred and ninety-five. There is no more reason for pluralizing million than thousand or hundred. The pluralizing is with the noun numbered. You would say five million men, not five millions man.

Is it judicious to absolutely prohibit whispering?

A. P. G., Iowa.

Never make a rule you cannot enforce.



[The teacher will find it pleasant, as a variety, to silently read the stories, or selections, then repeat in her own language before the class, which in turn reproduces, orally or in writing.]

REPRODUCTION EXERCISES.

BY K. L. B.

BESSIE'S LESSON.

[First grade.—Oral.]

Bessie slipped down from papa's knee and ran away to the nursery. Pretty soon she came back, her arms full of playthings.

"Now papa and mamma and Aunt Ruth, too, won't you be my scholars, and do just as I say?"

"Yes, indeed," replied both mamma and Aunt Ruth; but papa looked naughty and said, "I want to do just as I like."

"O! please be good and be my scholar," begged Bessie.

"Well, I'll try, but it comes hard to some people to do right," was papa's reply.

Bessie put her toys on the table. "All the children may go take a toy," she said, soberly.

Mamma and Aunt Ruth looked as if they wanted the toys, but didn't quite dare take them. Papa, however, ran to the table and gathered up the best toys in his arms. Bessie looked grieved, and said, "I think it would be nicer for the little boys to let the little girls choose first."

"Oh!" said papa, dropping the toys and backing away from the table, looking very red and ashamed.

The little girls selected their toys, then the boy his, and Bessie began: "What have you Ruth? Hold up your toy very high and tell me."

"I have a rooster," said Aunt Ruth.

"What have you, Anna?"

"I have a pig," replied mamma.

"Herbert may tell me what he has."

"I have a lame donkey, with one ear gone, and a poor looking tail," said papa, talking very fast.

ALICE AND I.*

[Third grade.—Oral and written.]

I am a little girl, and my name is Winifred. My age is ten, and I live in a pretty valley among the mountains. For a long time there was not a single child in the whole valley but myself, so you see I had no playmates. But mother is as good as any boy or girl, and will play with me whatever game I like. She is such a pretty mother, with her bright brown eyes and curly yellow hair. I, Winifred, am like father. I have black eyes, and my brown hair is as straight as pine-needles. Father is a writer. He makes many books, and people out in the world read them and laugh and cry over them, so mother says. He gets his money that way.

We came to the valley when I was very small. Father had been so ill that every one was afraid he would die. The doctors said that the air of the valley would make him well. So we came here. He is much better now, and we are all very happy. Our house is on a hillside, looking down the whole valley. It is made of redwood, and the rooms are large and pleasant. There are many books and pictures, and skin rugs on the floor. When people come to see us they say, "Isn't this delightful?"

*"Alice and I" is intended to be a description of child-life and pleasures in the country, and more than that the considerate, loving relations that should exist between comrades.

I have my lessons every day with father and mother, only they say I must go to school in the East, by and by. Alice will go, too; but you don't know who Alice is.

ALICE AND I.—(II.)

[Third grade.—Oral and written.]

One day in October we had a dreadful storm. I have seen many storms in my life, but never one as severe as this. The wind howled down the cañon, shaking the house; the rain fell in torrents; the thunder roared, and every now and then there was a sharp flash of lightning. I clung to mamma and hid my face, but dear mother only said, "Winifred, my child, we are right in the hollow of God's hand." At last I forgot my fears, and when bedtime came, was quite willing to go. By this time the storm was not so frightful, and I soon fell asleep. I had a strange dream. I thought I was standing at the end of the terrace, when a white dove flew down and lighted on my hand. I stroked and patted it, and then I thought it said, "I have come to stay always with you." How happy it made me. I awoke laughing to see my mother's smiling face bent over me. And by my side, in the bed, was a little girl about my own age. She lay there looking at me with her blue eyes, and her bright curls were scattered over the pillow.

"This is cousin Alice, your Uncle Ralph's little girl," said mamma. "She came last night in all the wind and rain, to be your sister. She has no home now but this, for her parents are dead."

I looked at Alice and held out my arms. It was my dream come true. She crept into them, and we kissed one another, and to this day Alice has been more than a sister to me.

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THE AMERICAN TEACHER.

A. E. WINSHIP, } Editors.
W. E. SHELDON, }

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TEACHERS must not be fanatical.

It is easier to keep good order than to have poor order.

AMERICAN manual training schools are highly compiled in foreign publications.

If tempted to spend money foolishly, think how much it will purchase of reading matter that will advance you in the profession.

WHEN a teacher in Geneva completes her thirtieth year of service in the schoolroom, a great fête is made for her. In America she is liable to be "dropped" as superannuated long before she has served a generation.

"**WHAT** is the teacher's relation to his pupils?" a superintendent asked one of his teachers the other day. "He is their friend, counsellor, and assistant, bound to serve them to the extent of his ability in every possible way," was the reply.

THE Self-Pensioning Teachers' Association of New York City proposes annuities for female teachers who, after thirty-five years' service, desire to retire; to male teachers who, after forty years' service, desire to retire; to any members who, through continuous ill health or other disability, are incapacitated from discharging their school duties properly.

A MERRY CHRISTMAS GREETING to all our readers. The best Christmas gift is the making of our friends happy by the tone and temper of our life, the love of cheer we bring. May every reader have a Merry Christmas through the influence of every friend and force of life, but above all may they make a Merry Christmas for all those with whom they labor.

WHY WE TEACH.—We do not teach arithmetic simply because the child needs to know how to add, subtract,

multiply, and divide,—we could teach arithmetic for those purposes in a short time,—much less do we do it for the purposes of acquiring mental agility. We do not teach geography merely that the child may know that one inaccessible peak in the Himalayas is higher than an uninhabitable peak in the Andes, much less to acquire facility in rattling off the names of the capes, bays, gulfs.

A. B. C.—At one of the large normal schools of Pennsylvania, upon the examination of a large number of candidates, it was noticeable that there was a great gulf between the good spellers and the poor. "How do you account for it?" asked the principal of a prominent county superintendent who was present.

"Let me see," said the superintendent, "I suspect that the good spellers were all taught their *a, b, c's*, and the poor spellers by the word method."

"Nonsense," said the principal, "it will be the reverse."

"We will see," said the superintendent. To the astonishment of the principal the result was as prophesied.

Now this is probably a general truth, but it need not be. The fact is, however, that it will take great discretion and care for a teacher to get good spelling with the word method.

THE COUNTRY TEACHER.

The Swiss are generally acknowledged to be a remarkably intelligent people, and a certain feature of their school policy might well be copied in this country. They pay a teacher more to go into the country than she will receive in town. Perhaps this rule does not hold in all parts of the little republic, but it is the case where the school authorities are wise. In many country districts it is exceedingly difficult for a teacher to obtain board at any less price than she would pay in the city. The city privileges and the society of others of her business are dear to the teacher, and she stays in her country school only until she can gain a place in town. On the other hand, the country school needs the best teaching obtainable. Many of the boys and girls are in school but one term a year, there is little grading in the school, and, without a master, but one mind to plan and execute. Americans will be wise when, like Geneva schoolmen, they offer special inducements to teachers to go into the country and to stay there.

OBSERVATION OF CHILDREN.—(III.)

BY ALBERT E. WINSHIP.

AFTER the detailed and elaborate tests already indicated, teachers who take an interest in these investigations can easily form estimates from simple tests of their own designing, or from their general knowledge of the pupils, so that they can rank them upon their ability in the following lines. Do not give your thought to more

than one in any given week. Think, observe, make up your mind for a week before you make the record. Then give a week to the next.

Power of Imitation.—Keen, fair, poor.

Quick to Answer.—Prompt, moderate, slow, hesitating very slow.

Quick to Catch a Question.—Quick, slow, stupid.

Credulous.—Quick to detect a joke or trick, slow to see it.

Docile.—Perfectly, if carefully handled, rarely.

Irritable.—Very, under provocation, rarely.

Passionate.—Quick, slow but intense.

Obedient.—Prompt, slow, disobedient.

Truthful.—Fanatically truthful, sensibly truthful, politic in the truth, exaggerates, no regard for truth when a lie seems serviceable.

Industrious.—Earnestly so, reasonably so, indifferently so, lazy.

If in all these matters we could have a fair consensus of opinion through the faithfulness of our readers, it would be of great value as a foundation for future deductions. We are not at all certain that there is sufficient interest in the subject to warrant an expectation of very general attention to these tests, but we will hope that in view of its importance a reasonable number of responses will be forthcoming. If the first two were so elaborate as to be formidable, then take those in this article.

BOOK-A-MONTH COURSE. — (IV.)

The fourth book in the course is *Education in the United States*, by Richard G. Boone, published by D. Appleton & Co. of New York City. Price, \$1.50. [It will be sent from this office, postage pre-paid, upon the receipt of price, or it can be ordered of the publishers, or of any bookseller.]

This is the only complete, reliable, winnowed, well-written history of education in this country that has yet appeared. It is more than a record of educational events and institutions,—it is a story and a philosophy. It is one of the few educational books that a teacher who wishes to be a power among his associates must read. It presents relations as well as facts, forces as well as tendencies, and will prove much more valuable than it promises at first.

SUGGESTIONS.

Read the "Editor's Preface" at least three times; read it aloud; read it with some one. Omit the "Author's Preface." All but well-disciplined readers should omit the "Introduction" until after the reading of the book. Read chapter one of the "Colonial Period." Omit chapter two for the present. Read chapter three somewhat rapidly, not trying to remember any special things. Read chapter four *with great care*. Run it over once or twice after it has been carefully studied.

Breathe its atmosphere. Read casually chapter five. Read with great care chapters six, seven, eight, and nine (pp. 80-157). Fix in mind the pivotal facts. Look through the four chapters, noting carefully the sub-heads before you begin to read and after you have read. These seventy-seven pages are the cream of the book for the average teacher.

Be guided by your own taste and needs as to how much attention you will give to chapters ten, eleven, twelve, thirteen, and fourteen. Unless specially interested I should omit them until after the rest of the book has been read. Chapters fifteen, sixteen, and seventeen should be read thoughtfully. Chapters eighteen and nineteen are of great importance. The "Conclusion" should be studied with thoroughness.

The order of reading that I would commend, therefore, is Editor's Preface, chapters I., III., IV., V., VI., VII., VIII., IX., XV., XVIII., XIX., Introduction, XXI., XVII., XIII., XIV., II., X., XI., XVI., XII., XX.

Readers may wonder why, in the case of this book, we deviate so widely from the author's plan. It is unlike the others. It is not helpful like Howland's *Practical Hints*, nor interesting like *Emile*, neither is it an intellectual tonic like Campayré's *Elements of Psychology*. It is to be read chiefly for the good its facts will do. For these reasons there is a great difference in the relative value of different chapters.

QUESTIONS.

1. Explain the force and significance of the third sentence in the second paragraph of the "Editor's Preface," "For in the history," etc.
2. Relate in your own language the last sentence in the last paragraph, page vi., "Editor's Preface."
3. State the reasons why you accept the second sentence, paragraph 3, page 7.
4. Give examples of the truth of the sentence: "Formerly each subject," etc., page 7.
5. Enlarge upon the sentence: "The entire educational idea," etc., page 7.
6. Explain in brief the relations of New York, Virginia, and New England to the early American schools, chap. 1.
7. Of Massachusetts, Connecticut, New York, Pennsylvania, and New Jersey, chap. 3.
8. What do you think of the characteristics of the anti-revolution teachers? See last paragraph page 65.
9. What surprises you in chapter 6?
10. Have you any such opinion from reading this book as that of the first paragraph in the "Conclusion"?
11. Is the fact stated in "2," page 383, serious?
12. Have you given special thought to the problem suggested in "6," page 383?
13. What is the most encouraging sentence in the "Conclusion"?



LATITUDE AND LONGITUDE.—CIVIL GOVERNMENT.

BY ELEANOR FINLEY, CALIFORNIA.

WALLACE.—“I take a balloon trip from lat. $37\frac{3}{4}^{\circ}$ N. and $122\frac{1}{4}^{\circ}$ W. I descend at lat. 42° N. and long. 88° W. From what city did I start and where did I stop?”

Maps are searched, and Louis tells him he started from San Francisco, and is now near Chicago.

Louis.—“I take the balloon and come down at 19° N. and $98\frac{1}{4}^{\circ}$ W.”

Eddie.—“You’re in danger, as Popocatepetl is there.”

Louis.—“I next visit the Equator at 50° W.”

Jimmie.—“At the mouth of the Amazon, I take the balloon and go to 77° W. and about 39° N., where I find some work, as I’m a member of the legislative department of the United States.”

Wallace.—“Were you elected by the people or appointed by the legislature?”

Jimmie.—“The legislature appointed me.”

Lena.—“He’s a senator, and he’s at Washington City. I take the balloon and go to 117° W. and $32^{\circ} 45'$ N., for I’m elected to the executive department of the county.”

Katy.—“You are in San Diego.”

Laura.—“You are sheriff of San Diego County. I go to a city that has the same latitude as Rome, and take the position of executive of the city.”

Lula.—“Mayor of Boston or of Chicago.”

Laura.—“Boston.”

* * * * *

Lula.—“I’m elected a member of the legislative department of the county. What am I called?”

School.—“Supervisor Kincaid.”

Lula.—“Who elected me?”

Frank.—“The men who are citizens and are over twenty-one years old. I’m a member of the legislative department of the United States. I belong to the smaller division.”

Lena.—“You are Senator Tripp, and the California legislature appointed you. I’m the head of the executive department of the United States.”

Laura.—“President Ellis. I want the government to donate \$5,000,000 for water development. To what department must I apply?”

Carrie.—“To the House of Representatives.”

EVERY school must make good penmen. The public demand it.

SUGGESTIONS FOR TEACHERS OF MUSIC.

BY HATTIE C. STACY, PASADENA, CAL.

THE teacher who secures the best results in the management of children’s voices, will at each lesson insist upon the observance of the following rules: An erect, but easy position of the body; a clear and distinct pronunciation of syllables and words, with careful attention to making the consonants and singing the vowels; the vocalization of all exercises sung; no amount of tone should be used in singing either syllables or words, or in vocalizing, beyond that which the pupils can produce with perfect ease.

If the voices are too rough and loud, use the syllables “coo” or “low”; if too weak and feeble, use “lay” and “la.” Cultivate a pleasant, soft, and smooth tone. If the children do not seem to hear or imitate well, do not use your voice more loudly, but more softly. In giving out a new rote song, it is best for the teacher to sing it all through first; then give it phrase by phrase for the children to imitate, taking just enough at once to be sung in one breath.

No breathing exercise should be given in connection with music in the lower grades. Cultivate the power of recognition. This is of the highest value in training the musical perceptions. Singing in connection with marching or other violent movements of the body will not fail to result in serious injury to the voices and it is *strictly prohibited*. To preserve the buoyancy of the music, pupils should be kept cheerful. Do not sing *with* your pupils but *for* them.

A GEOGRAPHY LESSON.

BY S. LOUISE VALENTINE.

PREPARE, on manilla paper, a stencil map of the state you are to teach,—e. g., New Jersey; also, draw the outline in the molding board and on the blackboard. Have each child find on his own map, in his geography, the highlands of New Jersey. Have one pupil draw it in the sand, then on the board, and lastly all draw on the stencil. Find and draw, in the following order, rivers, cities, etc.,

The cities are marked in the sand by a toothpick, to which is pasted the name written on paper. Paterson was marked by a toothpick, to which was tied a picture of a locomotive,—a bit of silk and cotton goods representing her manufactures.

We placed minerals in the sand where found. W. placed productions in the part of the state where produced, having an onion to represent vegetables, a strawberry to represent that fruit, a peach-pit to represent peaches, and a cranberry to represent cranberries.

We reviewed often,—e. g., after drawing the first river we reviewed the highlands, by finding them on out-

line, geography, and stencil maps, and reciting what we had learned about them.

After the physical features were learned we taught the history of New Jersey. The whole was reviewed topically, both orally and in writing. The work was done so thoroughly *by the pupils*, and they were so interested, that the lesson was long remembered.

A LANGUAGE LESSON.

BY L. M. MCCARTNEY.

Actual Work in Second Grade.

A PICTURE of a boy blowing bubbles was placed before the class, and each pupil was told to write a sentence on his slate about the picture. These sentences were then read from the slates. One pupil read, "That boy has a white pipe"; another, "The boy is blowing bubbles and is happy." The teacher then asked how he spelled *bubble*, and how he began and ended his sentence. A third pupil read, "The little boy has a crock"; a fourth, "The boy has golden hair." The teacher required this last pupil to spell *golden*. Another said, "That boy's name is Harry." The teacher asked how *boy's* was spelled, and after several failures it was at last correctly spelled. The teacher now asked, "If I have a bottle and drop it, what will it do?" The reply was immediately given, "It will break." "What have I done?" "You have broken it." "What did I do?" "You broke it." "What are then the three forms of the word *break*?" "Break, broke, have broken."

Again the teacher asked, "When you are tired and your mother wants you to get on the couch, what does she say without using *get*?" A bright pupil replied, "She says, 'Go lie down.'" "What did the hen do?" "She laid an egg." "What will she do?" "She will lay an egg." "If you go down town to-day, what will you do?" "I will buy some goods." "What did you yesterday down town?" "I bought goods."

Pupils were then sent to the board to write sentences, using the three forms of the verb *bite*, *bit*, and *bitten*. After these sentences were corrected the teacher said, "If I want a book over there I will say, Ada, — me that book. Supply the word." After several wrong answers a pupil replied *bring*. "If I asked you and you had already given the book to me, what would you say?" One pupil said, "I have given you the book." "Use some other word besides *given*," said the teacher. "I have brought you the book." "If you could not do it at once but would after a while, what would you say?" "I will bring you the book."

Teacher.—How should a sentence always begin and how should it end?

Class.—It should always begin with a capital and end with a period.

The class was then excused.

HISTORY.

BY ELEANOR FINLEY, CALIFORNIA.

MANY pupils enjoy writing essays on the history lessons, and some have made quite pleasing jingles of the leading events. The most interesting subjects have been: "When I was a little mound-builder," "My visit to New York in 1640," "Three days with General Grant," "How I helped to found New Jersey," etc.

Since dates are so hard to learn, I help the children by having each nation represented by a color, and when a date is mentioned in explorations, wars, etc., it is written on a side blackboard in the color of the nation it refers to. The civil war dates are written in blue and gray. In recitations, pupils read, and usually close books and repeat.

History Games.

Lula.—"I am a general and I took part in the civil war. I was commander in a great battle, which lasted three days, and had it not been for my success the war would have been carried into another section of the country. My opponent was one of the greatest generals of the war."

Laura.—"Are you General Meade, and was your opponent General Lee?"

Lula.—"Yes, at Gettysburg."

Laura.—"I'm a sympathizer with the unfortunate. I hear of the cruelties practised toward some poor people who are not so fair as we are, and I resolve to help—"

Carrie.—"You're Garrison."

Lula.—"John Brown."

Laura.—"Carrie knows me."

Carrie.—"Long ago I came to this country, to better the condition of men. I got some land in pay for a debt, and allowed people to have the use of it for almost nothing. There were people who had owned the land before I got it, so I had to buy from them, too."

Laura.—"William Penn. I am an inventor. Years ago I felt that there must be more use made of the powerful steam, and that it could be used in helping travelers along. So I studied and worked, and almost ruined my poor family." *Lula*.—"Fulton."

SIMPLE DESIGN FOR BUSY WORK.

BY ANNA B. BADLAM,

Principal of Training School, Lewiston, Me.

ALL busy work should have a two-fold object,—namely, to instruct as well as to interest the child, and the preparation of the material usually requires no little study, time, and ingenuity on the part of the teacher.

The designs made by the teacher should consist of pleasing arrangements of geometric figures, cut from colored paper, and mounted upon six-inch squares of manilla paper. The designs should be simple, and in

two or more contrasting colors, thus teaching harmony of color as well as design.

These designs should serve, first, as copies for the children to work from; later, each design may be used as the center of any original design which the fancy of the child will lead him to arrange in well-balanced groupings about it. This second stage of the work must be divided into two steps: (1) Where the upper, lower, left, and right quarters of the design are similar and hence balance; (2) where the child is taught to see the harmony of balancing the upper and lower quarters of the design, and the left and right quarters, or, in other words, is led to grasp the thought that *similar opposite* groupings are restful to the eye, while *similar adjacent* groupings are distasteful and unpleasing.

MATERIAL ARRANGED BY THE TEACHER.

1. As models for the children to copy.
2. As centers for building original designs.
- I. Simple designs with four squares of two contrasting colors.
 - 1A. Arrange in a solid square on its diameters.
 - 1B. Separate these four small squares, leaving a space the width of a square between them.
 - 2A. Arrange in a solid square on its diagonals.
 - 2B. Separate these four small squares, leaving a space the width of a square between them.
- II. Simple arrangement with four circles of two contrasting colors.
 - 1A. Arrange in a figure suggestive of a square, the circumferences touching.
 - 1B. Separate these circles one half the width of the circle apart.
- III. Simple arrangements with five squares of three contrasting colors, (new color for the center).
 - 1A. Arrange like I. 1B., and place the odd square on its *diameters* in the center.
 - 1B. Arrange like I. 1B., and place the odd square on its *diagonals* in the center.
 - 2A. Arrange like I. 2B., and arrange the odd square on its *diagonals* in the center.
 - 2B. Arrange like I. 2B., and place the odd square on its *diameters* in the center.
- IV. Simple arrangements with five circles of three contrasting colors, (new color for the center).
 - 1A. Arrange like II. 1B., and place the odd circle in the center.
- V. Simple arrangements with four squares and a circle, or four circles and a square, three contrasting colors, (new color for the center).
 - 1A. Arrange like I. 1B., and place the circle in the center.
 - 1B. Arrange like I. 2B., and place circle in center.
 - 2A. Place the square on its *diameters* in the center, and arrange the circle at each of its corners, at each of the sides.

2B. Place the square on its *diagonals* in the center, and arrange the circles around its sides, so that the circumference of each circle touches a side of the square, at each of the corners.

VI. Simple arrangements with four half squares (right-angled triangles) and a square or circle in the center; three colors, (the new color for the center).

1A. Place the square on its *diameters*, and arrange the triangles so that the right angle of each touches the side of the square.

1B. Place the square on its *diagonals* in the center, and arrange the triangles so that the right angle of each touches the corner of the square.

2A. Place the circle in the center, and arrange the triangles so that the right angle of each touches the circumference.

2B. Same position, but let the triangles lap over the circumference.

VII. Simple arrangements of four half circles and a circle or square.

1A. Place the circle in the center, and arrange the half circles so that the arc of each touches the circumference of the circle.

2A. Place the square on its *diameters* in the center, and arrange the half circles so that the arc of each touches the sides of the square.

2B. Place the square on its *diagonals* in the center, and arrange the half circles so that the arc of each touches the corner of the square.

2C. Place the square on its *diagonals* in the center, and arrange the half circles so that the chord of each touches the corner of the square.

VIII. Simple borders of two contrasting colors.

1A. Squares arranged so that the corners of each square touch the corners of the next square.

1B. Squares arranged so that the corner of each square overlaps one half the next square.

1C. Squares arranged so that they are placed alternately on diameters and diagonals.

2A. Circles arranged so that the circumference of each circle touches that of the next.

2B. Circles arranged so that the circumference of each overlaps one half the next circle.

3A. Half squares (right-angled triangles) arranged so that the right angle of each touches the base of the next triangle.

3B. Same as above; let the triangles overlap.

4A. Half circles arranged so that the arc of each touches the chord of the next half circle.

4B. Same as above; let the half circles overlap.

5A. Square on its diameters and circle alternating.

5B. Square on its diagonals and circle alternating.

GENERAL DIRECTIONS.

Select any one of the mounted designs, and place it where it can be seen by the class in "Busy Work."

Distribute the colored geometric forms (ungummed), and direct each child to reproduce the arrangement as many times as he can upon his desk; as a reward for good work, near the close of the lesson pass down the aisles and give to the successful workers the corresponding pasteboard forms (one of each). Have these used to outline upon the slate an arrangement similar to that which they have been studying.

N. B.—No better work than this latter step can be found for strengthening the hand and insuring nicety of lines.

Later in the term provide each child with one of the simple mounted designs. Instruct him to copy this with the paper forms, and to originate a design about it as a center.

Toward the close of the year the gummed forms may be substituted for the ungummed, and the children encouraged to arrange and mount their designs upon paper. Care must be taken to cultivate the taste in the selection of colors.

Later these designs may be outlined upon paper, if pasteboard forms be provided as the units of the expression of the design.

FOLDING AND CUTTING A PATTERN FOR A CUBE.

BY JANE LANDON GRAVES,
Millersville State Normal School, Penn.

MANY teachers who have never worked out for themselves a plan for folding and cutting freely the patterns for simple solids may find the following directions useful.

Take an oblong of paper, any size, (9 x 6 will give a two inch cube), trisect the left margin by bending part toward you and part away from you, as in Fig. 1.

Keep moving the parts until, by pressing the folds all together, three exactly equal parts are indicated on the

one margin. Rest the paper on the desk with the long edges from left to right, and lay the near third of the left margin, entirely on and exactly even with the middle third, and crease the fold lengthwise of the paper. If you do not let it slip the fold will be perfectly straight. In the same way crease from the

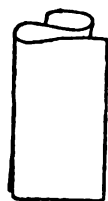


Fig. 1.

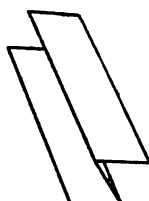


Fig. 2.

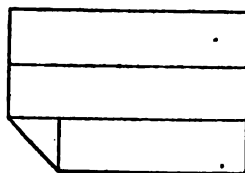


Fig. 3

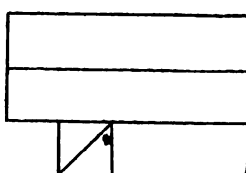


Fig. 4

other point, keeping folds and edges exactly even. That will produce Fig. 2.

Now open the paper. Lay it with the long edges from left to right, and lay the near third of the left margin on and even with the first long crease (Fig. 3).

Cut along the fold as far as the edge extends, being careful not to cut beyond, and fold the square thus made forward upon the sheet, keeping edges even (Fig. 4).

Now open and cut out a flap as in Fig. 5.

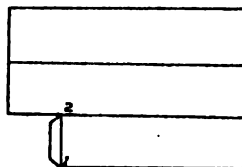


Fig. 5.

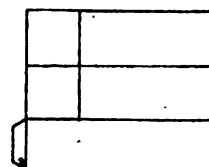


Fig. 6.

Even with line 1-2, Fig. 5., fold the projecting two thirds over, creasing the fold as in Fig. 6.

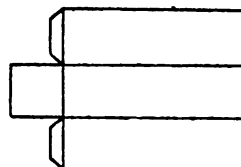


Fig. 7.

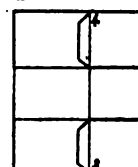


Fig. 8.

Cut the center fold between the two squares thus formed, and from the further one cut a flap as in Fig. 7.

Now fold the remaining square forward upon the sheet, back from its right edge, keeping edges and folds even, fold the sheet, as in Fig. 8.

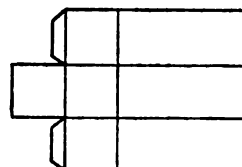


Fig. 9.

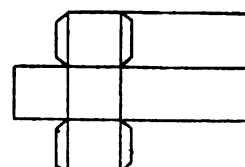


Fig. 10.

Now open and you have Fig. 9.

Cut flaps as in Fig. 10, and fold down again as in Fig. 8. This time fold back from the line 3-4, and crease, making Fig. 11.

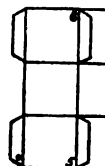


Fig. 11.

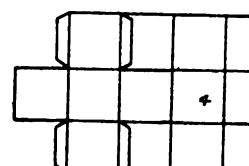


Fig. 12.

Now fold back from lines 5-6, and unfolding you have Fig. 12.

Cut on the dark lines, and cut flaps all around square 4 as in Fig. 13.

Now you have the pattern cut and folded. Paste all the flaps on the inside and you should have a perfect cube.

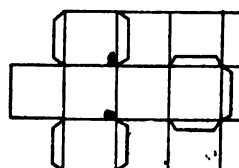


Fig. 13.

Music Department.

CLASSICAL MUSIC IN PUBLIC SCHOOLS.

BY W. S. TILDEN.

But the question arises in regard to any method, or course of study in singing, "Is it adapted to give culture to the pupils, so that they will be able to take up musical works of some magnitude as they advance?" We have all heard of the children of the public schools in Dundee, (and other cities in the British Isles) giving the chorus parts of the principal oratorios entire, and with seeming intelligence and appreciation. But on this side of the water we have listened to these accounts with some degree of skepticism, both as to the wisdom and the feasibility of such attempts.

But a Boston music teacher has recently shown us, for the first time, we believe, in this country, that such a thing is practicable with our staff-notation, by giving, with the pupils of a suburban high school, the entire chorus work of the "Creation" in a perfectly successful manner. It becomes a matter of interest to us to discover by what processes this result has been reached; for even if it were to be said that the music was only committed to memory and not read (which, by the way, is not true in this case), there must yet be a grasp of related musical sounds on the part of the young singers that is in itself worthy of especial remark.

In careful observation of the method pursued in the different grades of schools from which those pupils were drawn, we find it in several respects unique.

1. The first thing that attracts our attention is the simplifying of the work. Many things which have been heretofore introduced are discarded, on the ground that they tend to complication and hence confuse more than they help. The instruction is narrowed down to the vital things in every grade from the lowest upward; and so it becomes more definite and clear to both teacher and pupil. And this concentration of effort on essentials gives that mastery of them which constitutes a firm basis for later progress.

2. The nomenclature of sounds in the sight-singing course consists only of the numerals from 1 to 7; the key-note, in whichever octave, being uniformly called 1, the position of the note deciding which 1 is meant. These numeral names are, however, used only in speaking of sounds; never while singing them. Letters are employed to define the key; the *do re mi* syllables not at all. The scale is learned with a single syllable, and every sound is in that manner given in response to the numeral called by the teacher; but calling sounds, *apart from notes*, is used only at the outset, and there is no "singing from figures." The process of learning to individualize sounds without pronouncing their given

numeral or syllable when singing, seems slow at first; but it is believed that the progress is surer, and that to be only able to hit the right sound while pronouncing a given word is but little better than having it struck on the piano for the pupil.

3. In sight-singing the theory is that pupils learn to read by reading; hence, as soon as a few sounds are mastered, simple exercises containing them are presented, written out on the staff in usual form, holding the time element somewhat in abeyance for a while by using only uniform lengths of notes and rests. The exercise is first read by the pupil, in numerals, with speaking voice; then it is thoughtfully sung, taking care to produce the sounds which were designated in the reading, with but a single syllable. The training of the eye and the ear thus proceed together, with no waiting for so-called preparatory exercises, such as singing from ladders, hand-signs, finger staff, pointing on a written scale, or employing any unusual forms of notation to be afterwards unlearned.

4. In the study of time no "time-names" are employed; but the pupil is led to an appreciation of relative duration without this mnemonic process. The pupils are not taught to beat time, either in the accepted form or any of its substitutes. The teacher indicates the time to the class, not by pounding the desk or a book, but so that they are guided visibly, much as they will be later under a formal director. The teacher's beating is carried on for their guidance not only in singing, but also in the preliminary reading. As greater facility in striking the right pitch of notes is attained, the time is enriched by prolongation of sounds; this is observed first in reading by prolonging the spoken numeral. An unobtrusive, quiet monotone being adopted by the class, long sounds can be as easily represented in this mode of reading as in the German time exercises with *la*. Later come the various divisions of the beat, etc.

5. In the treatment of chromatic sounds the pupil is taught to sing any sound "sharp,"—that is, semitone higher, or "flat,"—semitone lower. Thus, in reading the exercise through by numeral, *sharp-four* is called simply *four*; then attention is called to those notes that are to be "sung sharp." In all this work of striking pitch the pupils are required to make effort to think it out; errors are corrected, not by the teacher showing "how it goes," but by calling attention to the sound required, the exercises being, of course, within a reasonable degree of difficulty for the grade.

6. Singing in different keys presents no obstacle, as the children are taught from the first to count lines and spaces readily, either upward, 1 2 3 4, etc., or downward, 1 7 6 5, etc., from the 1 placed anywhere; teacher gives the pitch for the key in hand (which is soon named, and its signature observed), and the class proceeds at once to read and sing the exercise. Parts are easily taken as soon as there is a clear perception of sounds in connection with their names, and with the position of the notes therefor.



CHRISTMAS, 1890.

[An exercise for fourteen children]



The Leader.—Give Christmas welcome! Bid him draw near!
 Enwreathed with pine and with holly;
 He brings you presents, he brings good cheer,
 'Tis in fun, if he alily nips your ear.

In Concert.—"Peace on earth, Good will to men;"
 Now once more the sweet refrain,
 Heard on Bethlehem's star-lit plain,
 Echoes o'er hill and glen.
 Children's voices, rich and strong,
 Swell the grand triumphal song.

SONG.

Allegro.

Glo-ry to God in the high-est, Glo-ry to God in the high-est, and on earth peace, good will to men, and on earth peace, good will to men.

HAPPY CHRISTMAS.

[An acrostic.]

BY MRS. L. N. MOREHEAD.*

- 1st Pupil.*—Happy Christmas ever call it,
 Fitting name for that blest morn
 When within a lowly manger
 Christ the Lord a child was born.
- 2d Pupil.*—As the happy children gather
 Round the Christmas tree again,
 Let them not forget that Jesus
 Once a little child became.
- 3d Pupil.*—Pure and sinless was His childhood,
 Patient and obedient still;
 Thus He grew to perfect manhood,
 Working out His Father's will.
- 4th Pupil.*—Patient still He is, and loving,
 Even to the weak and wild,
 Watching over us in mercy,
 Blessing every little child.
- 5th Pupil.*—Years have passed since that bright morning,
 Yet our hearts with rapture swell,
 While we sing our Christmas anthems,
 And the Christmas tidings tell.
- 6th Pupil.*—Can there be a sweeter story,
 Told by minstrel's tongue or pen,
 How the Lord of light and glory
 Came to dwell with sinful men.
- 7th Pupil.*—Hymns of joy proclaimed His coming;
 Hymns by happy angels sung.
 Ne'er was heard such heavenly music
 Since creation's work begun.
- 8th Pupil.*—Radiant throngs of angels watching,
 Hailed with joy the star's bright ray,
 Shining with such wondrous beauty
 O'er the spot wherein He lay.
- 9th Pupil.*—In all hearts that song should ever
 Find an echo sweet and clear,
 Still responsive while the ages
 Cycle round from year to year.
- 10th Pupil.*—Sin and sorrow flee before it,
 As it swells from shore to shore,
 Till mankind shall grow more loving,
 Hating, warring, nevermore.
- 11th Pupil.*—Trust and faith in one another
 Strengthen ever, year by year;
 While sweeter, kinder thoughts awaken
 As the Christmas time draws near.
- 12th Pupil.*—Messengers of love and mercy
 Pass unseen from heart to heart;
 Prompting men to deeds of kindness,
 Causing grateful tears to start.
- 13th Pupil.*—Angel voices swell the chorus
 When our Christmas song we sing;
 Though unseen they hover o'er us,
 While sweet, loving thoughts they bring.

* NOTE.—Have a tasteful design arranged with a pin projecting, upon which to hang each initial letter, made of evergreen. Place them in the order in which the fourteen children of the class recite the stanzas.

14th Pupil.— Shall we ever grieve those guardians,
Watching us from day to day;
Sent us by our Heavenly Father
Lest we fall or go astray.

SONG.



1. All hail the pow'r of Je-sus' name! Let angels prostrate
2. Let ev-'ry kin-dred, ev-'ry tribe, On this ter- res-trial



fall; Bring forth the roy-al di-a-dem, And
ball. To Him, all maj-es-ty as-cribe, And



crown Him Lord of all, And crown Him Lord of all.
crown Him Lord of all, And crown Him Lord of all.

KRIS KRINGLE.

BY G. COOK.

INKLE, tinkle, jingle, jingle,
Hear the bells of good Kris Kringle.
Gently now, now loudly ringing,

Softly to himself Old Kris is singing,
"Ho, ho! ho, ho! away I go,
Over the ice and over the snow.
Never into a house do I creep
But where the children are fast asleep.
I have trumpets and drums, little, fat pigs,
And dollies with bonnets and curly wigs;
And candies! How they will laugh when they see
What a bagful of candy I'll bring with me!
I'm almost ready; so children dear,
Listen, for soon my bells you will hear,
Out in the air ringing so clear,
Merry Christmas to all, and to all good cheer."

A WINTER EXERCISE.

(For five little girls.)

BY JESSIE Y. PUTNAM.

BESSIE.—Let's welcome old Winter,
He's with us at last;
For see from the window
The snow falling fast.
It comes down so gently
It makes not a sound;
But there's a white cover
All over the ground.
Let's run out and catch some,—
I love the white snow;
And 'tis not very cold,—
The wind does not blow.

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Music in the Schoolroom.

1. *The Song Budget.* A collection of Songs and Music for Educational Gatherings. By E. V. DEGRAFF. Small 4to paper, pp. 76. 15 cts. This book owes its popularity to two causes: (1) It gives a great deal for the money; (2) The songs are not only numerous (107), but they are the standard favorites of the last fifty years. This is why the book contains more music than any other book published. For in all other books that we know of, two-thirds of the tunes are written by the compilers, who are of course partial to their own productions. Sup't DeGraff wrote no songs of his own but gathered those which his long experience as a conductor of teachers' institutes had shown him to be the most generally familiar and pleasing.

In fact, the success of this book has been due to the fact that only those songs were admitted that have proved to be universal favorites. This involved a large original outlay, as much as fifty dollars having been paid for the right to use a single song. But the best were taken, wherever they could be found and at whatever cost, and the result is a school singing book of popularity unexampled. For instance, a single firm in Cleveland, Ohio, J. R. Holcomb & Co., had purchased of us up to Feb. 15, 1898, no less than 9730 copies, 4500 within the last six months, besides 2100 of the *Schoolroom Chorus*.

2. *The Schoolroom Chorus.* A collection of Two Hundred Songs for Public and Private Schools, compiled by E. V. DeGraff. Small 4to, boards, pp. 148. 35 cents.

This is an enlarged edition of the *Song Budget*, with twice the number of songs. The plates of the last edition are so arranged that it is identical with the *Song Budget* as far as page 68, so that both books can be used together. The *Budget* and *Chorus* are particularly adapted for Teachers' Associations and Institutes. At these prices every meeting of teachers can be supplied with one or the other, while the fact that the tunes are standard favorites makes it easy for any audience to join in the singing at sight.

3. *The Song Century.* A collection of Standard Songs for School and Home. Compiled by C. W. Bardeen. 16mo, pp. 87. Paper, 15 cts.; boards, 25 cents.

The universal popularity of the *Song Budget*, the sales of which have probably exceeded that of any other school music book published, made it no easy task to prepare a similar collection to follow it in schools where its songs had become familiar. The songs here given are a final choice from more than a thousand which had been selected from every available source, but especially from actual and pleasing use in the schoolroom. As the list narrowed down to seven, five, three, two hundred, it became more and more difficult to reject, and the last twenty were dropped with extreme reluctance. But it was thought best to adhere to the limits of the *Song Budget*, and though this book contains more pages the price is the same.

A large portion of the songs have been rearranged expressly for this book. Effort has been made to keep within the compass of children's voices, avoiding the mistake of pitching them too low as well as that of making them too high; and also to preserve the harmony without making the accompaniment too difficult. The proportion of higher class music is somewhat greater than in the *Song Budget*, but the advance is no more than corresponds with the more cultivated taste that already appears from increasing instruction in the art of singing.

C. W. BARDEEN, Publisher, Syracuse, N. Y.

Edith.—Just see the soft snowflakes
I caught as they fell.
They are very dainty,
And funny, as well.
They were here on my coat
A mement ago;
And where they have gone to
I really don't know.
They went off as quickly
As though they had wings.
One scarcely can pick up
Such slippery things.

Lucy.—Here, right on my jacket's
The daintiest star;
And I cannot tell all
The shapes that there are.
I wonder if snow is
Of any real good?
Just about it I've never
Right well understood;
But I always am glad
To see the snow fall;
And I do not enjoy
A rainstorm at all.

Alice.—Why, snow is just vapor,
That, when it is cold,
Is frozen so quickly,—
Or, so I've been told,—
That it cannot make drops,
But forms lovely flakes.
And then a soft mantle

For cold earth it makes.
There are seeds in the earth,
Hidden snugly away
Where no one can see them
Till springtime to stay;
And some plants are alive,—
Or their roots under ground,
Where you really would think
They could not be found.
But Jack Frost goes hunting
To give them a bite;
For he likes just as well
The dark as the light.
Then the snow comes to keep
These things snug and warm,
And Jack Frost may grumble,
And threaten, and storm;
But while the white cover
Stays over their heads,
They are perfectly safe
In their snug, cozy beds.

Evelyn.—But how can the snowflakes
Keep things safe away?
They are real cold themselves
When we go out to play;
For, just make a snowball,—
Your fingers most freeze,
Even when you have mittens,—
My grandma made these.
And if you go sledding,—
I have a new sled.—
'Tis just like my mittens,

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A pretty, bright red;
Unless you keep running,
Your feet get so cold!
I have to cry sometimes
If I am six years old.

Edith.—If it only keeps snowing,
And snowing away,
Getting deeper and deeper
All through this whole day,
And then in the morning
The sun will shine out,
We shall find it just lovely
To scamper about,
And we'll play in the drifts,
And have splendid fun.
I'm so glad that winter
Once more has begun.

Bessie.—I love in the white drifts
To tumble around,
For the snow is so soft,
Not hard, like the ground,
And our clothes don't get wet,
For snow seems so dry.

Lucy.—Say, have you been told
That up in the sky
A woman keeps picking,
Whenever it snows,
From off her geese, feathers?
Each one downward blows.
Now look up and see them;
How pretty they are!

One scarcely would think
They could come so far.

Evelyn.—When I was just little
That story I heard,
But I do not believe it,
The very first word.
For I never knew feathers
Would melt like the snow;
So it cannot be true,
As you very well know.

Alice.—My mamma has told me
This mantle so white
That hides with its beauty
Some things from our sight
That are old and unsightly,
Kind nature, she's sure,
Sends to teach us how lovely
Are things that are pure.

THE SNOW - BIRDS.

YOU'RE welcome, little snow-birds,—
Come, here's some crumbs to eat;
Why, in the snow you're standing
With little naked feet.

I know you must be hungry,—
Come, here's a treat for you;
These crumbs do look so tempting,
I know you'll have a few.

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And now you little rovers
I have a word to say :—
Oh, summer came to see us
While you were gone away.

She brought to all us children
Both fruit and flowers fair;
And if you had not left us,
Why, you'd have had a share.

A little snow-bird answered :—
"I'm glad you were so gay,
With flowers, fruit, and sunshine,
While we were all away.

"But our coats look so shabby,—
Besides, we are so small,
We were afraid that Summer
Wouldn't care for us at all.

"Besides old winter likes us,
And o'er our coats of gray
He sprinkles little jewels,
Which Summer steals away.

"And so with our friend Winter,
Away we journeyed forth,
And saw his icy palace
Far in the frozen North.

"Among its jeweled towers
The livelong day we'd fly;
We quite forgot your Summer,
My merry mates and I."

And then the little snow-birds
All alyly glanced at me,
And flew to join their playmates
Upon the neighboring tree.

SNOWFLAKES.

LITTLE silv'ry snowflakes
Whirling through the air;
Dancing, pushing, crowding,
Tumbling ev'rywhere.

O'er the earth you're shedding
Soft and silv'ry light;
O'er the ground you're spreading
Carpets snowy white.

You are wearing many
Jewels rich and rare;
And I have n't any,—
Let me have a share.

So I'll run and catch you,
Little jewels gay;
If I stand and watch you,
You will fly away.

—The sweet old story of the year
Is spinning onward to its close,
Yet sounds as welcome on the ear
As in the time of op'ning rose.

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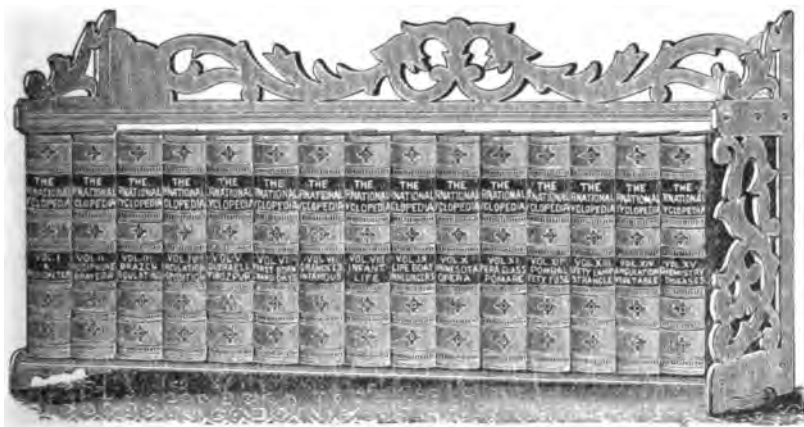
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Notes and Queries.

Questions and answers for the Notes and Queries should reach us by the first of each month. We respectfully request all the readers of THE TEACHER to take part in the discussions of this department. Send in questions, and furnish answers to questions given.—Ede.

ANSWERS TO QUERIES.

645. What salary do the university regents of New York State receive?

The regents of the university of New York State receive no salary. They are appointed by the legislature for life. The secretary receives \$5,000 salary, the assistant secretary \$3,500.

CHAS. R. S.

681. Who is called the "sick man" of Europe, and why?

The Sultan of Turkey is thus called because of the weakness of his nation compared with the "Great Powers" of Europe.

W. E. S.

708. A farmer took 20 bu. of wheat to mill. The miller would grind it for one fourth, or for 25c. a bu. The farmer accepted the latter offer. Did he gain or lose, and how much?

He paid $.25 \times 20 = \$5.00$. By paying toll it would have cost him 4 bu.,—i. e., the farmer would take home 16 ground bu. and leave 4 bu. as toll. The question of loss or gain depends upon the value of the wheat, which is not stated. With wheat at \$1.00 a bu. he lost \$1.00. With wheat at \$2.00 he gained \$3.00, etc.

C. L. F., East Peoria, Ill.

Credit to W. O. B., Uxbridge, N. Dak.

709. What was put on board the schooner Michigan when it was sent over the falls of Niagara in 1829.

A buffalo from the Rocky Mountains, three bears from Green Bay, two foxes, a raccoon, a dog, a cat, and four geese.

E. H. C., Binghampton, N. Y.

Credit to C. L. F., East Peoria, Ill.

710. What is meant by the "almighty dollar"?

J. D. C., Lilly, Ill.

This is a phrase first used by Irving in his "Creole Village," and which has become quite common. The importance of the dollar is meant; implying that money can accomplish almost anything.

E. A. C., Royalston, Mass.

Credit to C. L. F., East Peoria, Ill.

711. What is meant by "He has gone up Salt River"?

It is a popular way of saying that a candidate for office has been defeated. The phrase has its origin in the fact that Salt River, Kentucky, is a very difficult stream to navigate, owing to its rapid descent and tortuous course, and the real phrase applies to the person who undertakes to row up the stream; but we now apply it as above.

E. H. C., Binghampton, N. Y.

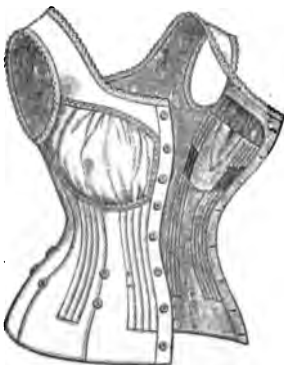
Credit to E. A. C., Royalston, Mass., and C. L. F., E. Peoria, Ill.

712. How did the name Brother Jonathan originate?

When General Washington took command of the army in the Revolutionary War he found it very difficult to secure ammunition, supplies, etc. On one occasion, at a consultation of officers, in which this vexed question came up for discussion, and there seemed no solution to the problem, Washington exclaimed: "We must consult Brother Jonathan on the subject." The Brother Jonathan was none other than Jonathan Trumbull, governor of Connecticut. Mr. Trumbull was consulted and furnished the needed supplies. When difficulties of this nature arose it was customary to repeat;

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Washington's words, and finally the origin of the expression was forgotten, and *Brother Jonathan* became our national sobriquet.

E. H. C., Binghampton, N. Y.

Credit to C. L. F., and E. A. C., Massachusetts.

713. Who is said to have saved the Union three times?

J. D. C., Lilly, Ill.

Henry Clay, by his Missouri Compromise, Tariff Bill, and Omnibus Bill.

C. L. F., East Peoria, Ill.

Credit to E. H. C., Binghampton, N. Y.

715. What President once held an interest in a distillery?

William Henry Harrison.

S. S., East Peoria, Ill.

Credit to E. H. C., Binghampton, N. Y., and C. L. F., East Peoria, Ill.

716. The base of a right-angled triangle is 13 ft. The perpendicular and hypotenuse are whole numbers. What are they?

A. W. K.

There are several methods of obtaining whole numbers which shall represent the sides of a right-angled triangle. The above problem is solved most easily by the *Rule of Pythagoras*. Take n any odd number, then $\frac{n^2-1}{2}$ = the second number, and $\frac{n^2+1}{2}$ = the third number. Substituting 13 for n in the formula, we obtain 84 and 85 for the other two sides.

E. BETHEL, Denver, Col.

Rule.—The rule for such cases is to square the base and divide the square into two numbers as nearly equal as possible, $-(13)^2 = 169$. Hence the hypotenuse is 85 feet, and the perpendicular 84 feet.

C. L. F., Peoria, Ill.

717. An old gentleman, having 120 turkeys, decided to keep one half to dispose of himself, and divide the remainder (60) equally between his two sons. He (the old gentleman) sold his flock at the

rate of 5 turkeys for \$2.00; one son his flock at 2 turkeys for \$1.00 and the other son 3 turkeys for \$1.00. On counting the proceeds, the old gentleman found that he lacked \$1.00 of having as much as his sons. How does this happen?

N. M., Chico, Cal.

The old gentleman received for his turkeys 40 cents each. The first son received 50 cents each, and the second son 33 $\frac{1}{3}$ cents each. Hence, while the father received \$24, the sons received \$15 + \$10 = \$25. For the sons to have sold their turkeys at the same rate as the old gentleman, the first should have been given 24 turkeys and the second 36.

719. Which is correct, "To be him is a disgrace," or "To be he is a disgrace"?

"To be him is a disgrace" is correct, because "to be" is a verb in its infinitive, and its "subject" would be the objective form, hence the predicate noun must be.

S. W. C. Roxbury.

Credit to E. A. C., Royalston, Mass., and C. L. F., East Peoria, Ill.

720. How many asteroids are now known?

On January 1st, 1890, there were 287 asteroids known, number 287, Nephthys, having been discovered by Peters on August 25, 1889.

C. L. F., East Peoria, Ill.

721. How many satellites are now known in the solar system?

There are twenty in all, called moons,—the Earth has one, Mars two, Jupiter four, Saturn eight, Uranus 4, and Neptune one. Mercury and Venus are the two planets that have no moons.

W. E. S.

Credit to C. L. F., East Peoria, Ill.

722. Can any reader give me a rule for measuring rubber belting without unrolling?

J. M. L.

To measure rubber belting without unrolling: Put a = diameter of inner coil; b = twice the thickness of belting; n = number of

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coils; then πa = length of inner coil; $\pi(a+b)$ = length of 2nd coil; $\pi(a+2b)$ = length of 3rd coil; $\pi(a+(n-1)b)$ = length of n th coil. The several multipliers of π form a series, the sum of which is $\frac{(2a+(n-1)b)n}{2}$. The total length of the roll of belt-

ing would then be $\pi \times \frac{(2a+(n-1)b)n}{2}$.

Ex.—Let $a = 10$ inches, $b = 2$ in. $n = 10$ in., then the formula becomes $3.1416 + \frac{(20+18) \times 10}{2} = 596.904$ in. length of belting.

W. L. B., Tustin, Cal.

723. A man borrowed \$535 at a bank interest of 10%, payable in advance. At the end of the first year he comes to the banker with \$200, saying: Deduct the interest for the following year, and credit me with the balance. What was the indorsement on the note?

WM. H. W.

Solution.—\$535 \div 1.10 = \$408.6363, the face of the note the man gave to the bank; \$408.6363 \div 1.10 = \$371.4893; \$408.6363 — \$371.4893 = \$37.147 interest for second year; \$200 — \$37.147 = \$162.853, the indorsement on the note. Ans.

W. O. BUTLER, Uxbridge, N. Dak.

By Algebra.—\$ x = amount indorsed on note; \$200 — \$ x = interest on balance; \$535 — \$ x = balance. As the note of interest is 10 %, the interest is $\frac{1}{10}$ of principal; \$535 — \$ x = 10(200 — \$ x) = \$2,000 — \$10 x ; \$9 x = \$1,465, \$ x = \$162 $\frac{2}{3}$, amount indorsed on notes; \$37 $\frac{2}{3}$, interest on balance. Proof: \$535 — \$162 $\frac{2}{3}$ = \$372 $\frac{2}{3}$; interest on \$372 $\frac{2}{3}$ at 10% = \$37 $\frac{2}{3}$.

W. L. B., Tustin, Cal.

QUERIES.

739. A company dining at a house of entertainment had to pay \$8.50, but before the bill was presented, two of them left, in consequence of which those who remained had to pay each 20 cents

more than if all had been present. How many persons dined?

H. G. M., Saxeville, Wis.

740. The plate of a mirror 18 inches by 12 is to be set in a frame of uniform width, and the area of the frame is to be equal to that of the glass; required width of the frame.

H. G. M., Saxeville, Wis.

741. Can an Indian become a citizen of U. S.?

H. G. M., Saxeville, Wis.

742. What was the origin of the word tariff?

M. S. S., Greensburgh, Pa.

743. Who is the president of the Mormon Church?

744. What is meant by Pelion and what was Ossa, mentioned in Lowell's *Prometheus*.

E. A. C.

745. If 4 bushels, 3 pecks, 4 quarts, 1.6 pints of wheat make a barrel of flour, and the toll is 4 quarts, 1 $\frac{1}{2}$ pints per bushel, how many bushels of wheat must I take to mill in order to get five barrels of flour?

H. S. W.

746. In turning a one horse chaise within a ring of a certain diameter, it was observed that the outer wheel made two turns, while the inner wheel made but one; the wheels were each four feet high, and supposing them fixed at the distance of 5 feet asunder on the axletree, what was the circumference of the track described by the outer wheel?

E. L. J., Ridge, N. J.

747. Name four words in the English language ending in *cion*.

748. When and where was the first National Political Convention held? Give the name of the party and the circumstances connected with it.

749. Why are our common potatoes called Irish?

750. When was *Poor Richard's Almanac* first published and when discontinued?

751. What word of two syllables in Webster's new *International Dictionary* has its plural a monosyllable?

752. Does any word in the English language, ending in *ith* retain the mute *e* of its primitive?

753. Who first introduced the mode of writing from left to right?

754. Who wrote the ballad, "Old Grimes," and who was the subject of it?

755. Name three words in the English language that have three letters in alphabetical order in them. One with four.

756. Were there two Missouri Compromises? If so, give them.

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THE friends of the kindergarten have good reasons for feeling encouraged and stimulated to persistently push forward the good work. For many years the progress was slow, but the good seed planted has at length taken deep root, and the cause has gained recognition and is being regarded now as an essential in the American public school systems. Free kindergartens are multiplying in all sections of the country, and in many places have become an integral part of the common school system of education. In these evidences of genuine progress and reform we heartily rejoice. These schools for young children should not be regarded as an "aesthetic" plan devised to amuse the neglected poor and keep them from mischief, but as a development of true philanthropy in the highest sense.

The kindergarten is as essential to one class of children as to another, viewed from the standpoint of rational culture. There is no one sided development in the Froebelian philosophy. It is designed to precede other elementary training, and to prepare the child,—boy or girl, rich or poor,—for the regular instruction of the public school by exercising all his powers so as to render them *self-active*.

HOW LITTLE BLIND CHILDREN WORK IN KINDERGARTEN.

BY M. E. C.

THERE was such a merry din in the long corridor it was difficult to realize that the gay players were all blind, and as they came into the kindergarten later, and found their places without collision with furniture or each other, we said, How do they do it?

The furniture of the kindergarten differed from that of any other in only one way. The tables were fitted with a cushion, something like a very thin mattress, with its upper surface "squared off" by raised cord like threads, which gave the squared surface necessary for kindergarten work.

At the back of the cushion opposite each child were some triangular tablets pinned down. When the kindergarten had given the direction to find a certain square on the cushion such and such a distance from the front of the table, the children drew out a pin and placed a tablet so its right angle would fit into the lower right corner of the square found. When the triangle had been perfectly fitted into this square, a pin was placed through the hole in the tablet to prevent its being misplaced, for every direction necessitates endless feeling since fingers must do not only their own work, but that of the eyes, too.

Little by little the small fingers placed and fastened the

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triangles, until a hollow square was formed by the meeting of the acute angles of four triangles. A perfect geometric talk was carried on, showing that the small people knew the sort of angles and direction of the edges of the triangles. The delight was great when the "empty" square was found, and was still heightened when by direction two triangles touching so as to form a large right-angled triangle were placed above,—at the middle,—below, at right and left of the form already "laid." Such gay, happy little faces as all had when giving the form a name. We who were blessed with seeing eyes pondered upon and wondered at the tactful patience and perseverance that must have been expended to develop all those little fingers to the point of accurately serving the mind so that every direction was quickly executed.

At the end of a table, separate from the only blind children, sat Edith Thomas,—the then deaf, mute, and blind child whose cleverness bids fair to place her in accomplishment even beyond Laura Bridgman. Close at her side was her special teacher, who transmitted the kindergartner's directions by means of the deaf and dumb alphabet. Little Edith followed with great readiness, and eagerly raised her bright, expressive face in token that she was ready to make the next move in the same manner as the only blind children did.

About the room were evidences that every means for making the children independent workers was employed.

The cabinets contained specimens of work beautifully done, the modeling being exceptionally well executed. When one realizes that all these specimens of mind and hand activity and craft were made entirely from direction, one questions whether or not the seeing children are allowed to work too much from imitation.

LOVE OF THE BEAUTIFUL IN CHILD LIFE.

BY MISS MARY MOOR, WALTHAM, MASS.

[Concluded from last month.]

Although we believe that all children possess this innate longing for the beautiful, and some degree of power to create it, doubtless their susceptibility to beauty of form and colors differs greatly. A little girl of three years of whom I have heard, could not be induced by her nurse to wear at the same time inharmonious shades or tones. Another child living amid untasteful surroundings, whose parents possessed no sense for color, was made miserable by the inartistic grouping of her baby patchwork. So deeply was the child hurt by this lack of taste that she repeatedly unbasted her work to rearrange it according to her own wee sense of beauty.

William Hunt, when a small child, made patchwork so artistic in distribution of color, that it was exhibited in Boston after his death, among his famous pictures. These instances are no doubt exceptional, but the first case cited

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shows that the sense for color was native and not the result of training, although the conditions of tasteful surroundings were the child's fortunate possession. In the second instance the same sensitiveness to beauty existed in spite of the unfavorable conditions. The case of the artist proves the presence of the artistic soul even in childhood, and the preservation of that work together with the work of mature life argues strongly for the importance of first efforts.

These highly endowed children, together with those of lesser talents, must be educated to do the work of the future; and it was because Friedrich Froebel felt so

deeply the need of these differently endowed natures that he gave the best of his life and thought to a system of education which should reach the needs of all child life. It is only the harmonious training of the special characteristics of individual children that shall lead to their fullest development. We must so educate the senses that children may be made capable through their own action of living out their inner natures in accordance with their individual endowments. It is true that nature and the outward world are continually revealing their beauties of form, color, and sound, for the delight and development of the children of all conditions. But how shall they appropriate to their needs these scattered impressions, these

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IN the *TEACHER* of December, on page 150, the Popular Geography of New York State is advertised by W. D. Kerr. The price should have been 75 cents instead of 60 cents.

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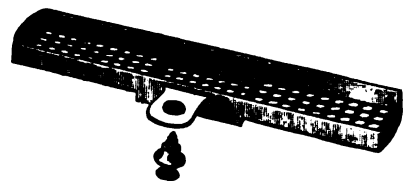
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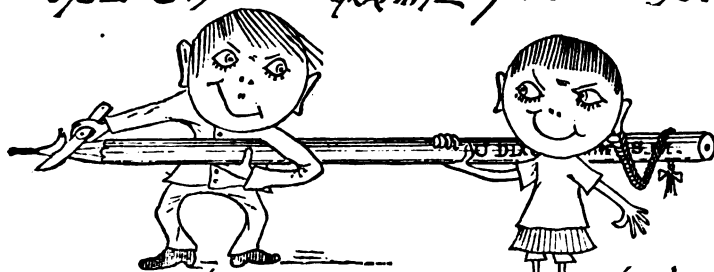
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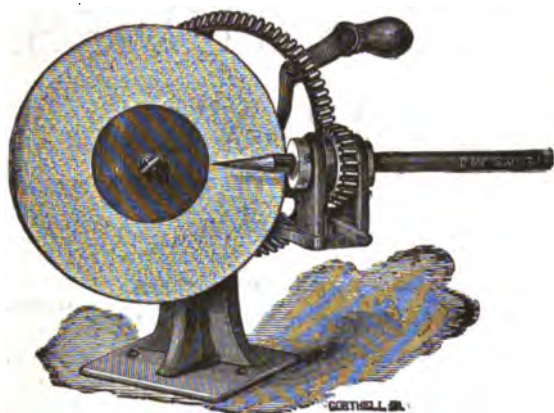
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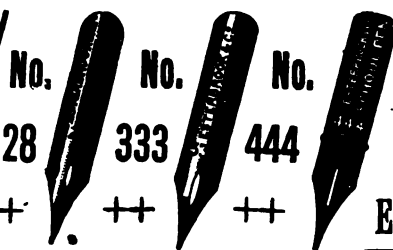
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AMERICAN TEACHER.



VOL. XIV.

DEVOTED TO THE METHODS AND PRINCIPLES OF TEACHING.

No. 7.

VINEY'S LETTAH.

BY ALICE MARSH.

DEAH TEACHAH, I's a lettah write
De fust day ob dis week,
En case you's nebah anawah yit
I's mighty suah youse seek.

But now I's write dis oder one;
Ef yous doan anawah back,
I's fearin dat dis lettie chile
'L tink its case she's black.

I's stay ter home fo a few days,
See 'f I's de menales got;
Caze tink ob couse I's been suppose,
Oh jes ez like ez not.

Say, doan you know, Miss Mollie, dat
Dem boys acrost dat aisle
Dey all time call me little nig,
En tease me all de while.

But I jes laffa, en tells em back
I's no dejections had
To callah, ef I knew da most,
Den dey was mighty mad.

En doan you tink Miss Mollie Brown
'Twill be an awful joke,—
Ef when we's all done git up dah
En heah de deah Lord spoke
Dey den begins de sortin ob
De sheepes en de goats
En dem boys all turns out coal black
En I's be de white folks.

THE BROOK.

BY E. IDELLA WALLACE.

“**B**ROOKLET, with your silver spray,
Why do you ever haste away?
I wonder as I watch your flow,
Whence do you come, and whither go?”

“From lap of darksome rocks I pass
Through flowery fields and moes and grass,
And in my mirror floateth by
Fair pictures of the soft blue sky.

“And so, like children without care,
I dance along and know not where.
Who called me from the rock-beds' side
Will be for me a faithful guide.”

— From *Goats*.

SEEN IN A PRIVATE SCHOOL.

BY ANNIE ISABEL WILLIS.

I SPENT the morning, not long since, in a private school, some of whose workings I had reason to believe would be helpful and suggestive to teachers. About thirty children attended, most of whose ages ranged from four to eight years. It is held in a large “sectional building,” put up for the purpose, and, with its many windows and light-painted walls, book-cases, curtained closets, and upright piano, the place is a pleasant one. Desks are used by the oldest pupils, but the two lower grades of children sit around tables on chairs low enough to enable their feet to touch the floor. Each of these grades has its own teacher, as does the highest, and as the latter only is curtained off, all the little ones are in one large room. The busy hum of work and study does not seem to annoy anybody, for each grade is intent upon its own work.

After the usual opening exercise, the dividing curtains were drawn, and then the younger children recited the 121st Psalm, answering questions about its meaning. After that they repeated in concert part of Mrs. Browning's poem, “A Child's Thought of God.” Their teacher led, and the little ones had evidently caught her emphasis, for theirs was very good.

They say that God lives very high;
But, if you look above the pines,
You cannot see our God; and why?

And if you dig down in the mines,
You never see him in the gold;
Though from him all that's glory shines.

God is so good he wears a fold
Of heaven and earth across his face,
Like secrets kept for love untold.

But still I feel that his embrace
Slides down by thrills through all things made,—
Through sight and sound of every place.

Then they answered questions like these: Why do we think of God when we see beautiful things? What are pine trees? mines? What is a secret? Who was Elizabeth Barrett Browning? Of what nationality was she? What was her husband?

The pupils are taught the stanzas wholly by repeating them with their teacher. They listen to her rendering

once or twice, as a new verse is to be learned, then say it, following with eyes and ears the motions of her lips. In each rendering, the piece is recited from the beginning, thus being associated with the whole.

This exercise finished, the kindergarten teacher took charge of the youngest, while the rest of the little ones were given instruction in German. Every little pupil in this branch bids the teacher good-morning and good-by each day, in both English and German. An object lesson was quickly followed by a motion lesson in which the parts of the body were named in German, then by one or two German motion songs or plays. Afterwards two went out to return as visitors to two more, who received them and talked with them about the weather, etc., in German.

Meantime the kindergarten class had a reading lesson, ended by a recitation of Macdonald's poem, "Little White Lily," and the repeating in concert, with motions, "Where did you come from, baby dear?" This was followed by a lesson on color and paper folding.

In the other class of little ones there was a lesson in drawing, lasting perhaps ten minutes. None of the recitations in the school are long ones, and there is scarcely any perceptible break between them. One did not realize the time had gone when, in an instant, the teacher holds a large book in front of her, clasping both arms around it.

"Who can tell what book I have here?" she asked.

"A book of poetry," said several. The enthusiasm is well roused by this time.

"But whose poetry?"

"Shakespeare's," remarked some one who had seen the book before.

That reply was right, and the teacher proceeded to ask who Shakespeare was, about when he lived, and other questions.

"Do you wish to see a picture of 'the lark' at heaven's gate singing?" The book is open now, and the teacher sits down with her little pupils to hear them repeat "A Morning Song, by William Shakespeare," as the childish voices announce. In this school no title is given without the author's name. The song, taken from "Cymbeline," is repeated in concert, and questions about larks and their main characteristics, the meaning of "heaven's gate," and where it might be, Phœbus and his steeds, meaning of *'gins* and *bin*, etc., bring out the beauties of the song. Each child was then requested to say it aloud. Two can not, and as they have been inattentive, they are not allowed to see the picture, which the rest of the children examined eagerly. The remainder of the brief time allotted to what is called on the program "With the Poets," was devoted to Lowell's "The Fountain." The children are on the lookout for any pictures or printed allusions to the poems or poets they learn about, and have enough material now to begin a scrapbook, which is soon to be done.

Geography comes next, and maps of continents cut out

of old geographies and pasted on press board, which is trimmed away to follow the coast lines, were used; also pictures of various formations of land and water, taken from textbooks, and made durable in the same manner. Of course this is supplemented by the use of the sand table.

A lesson on qualities was the last thing done by the middle class, most of whose workings are here described because they seemed more unique than either of the well-known kindergarten games engaged in by the youngest, or the more advanced lessons recited by the oldest pupils in the school.

The teacher held out both hands, closed tightly, saying, "I have in this hand something that is flexible and pliable, and in this hand something neither flexible nor pliable. What is the difference?"

After the reply the substances were shown, and the children defined various adjectives as describing qualities. The new quality to be learned was *absorbent* and its opposite. A small tray, with water in it, was placed before the pupils. A sponge, a stone, a ball, cotton, blotting paper, and a lump of salt were produced from various boxes and receptacles, to heighten interest. These were placed in the tray, and the difference between absorbent and non-absorbent things was elicited by skillful questioning. This seemed to be the favorite lesson,—indeed one child declared that she liked it best of all. In a short time the clock pointed to twelve, and there was a general rustle of departure. The morning was broken by a few minutes of calisthenics to music, with windows open, all following the motions of one pupil, who was chosen as a leader. The week's program differs on different days, no session being long enough to crowd all studies into it.

TALKS WITH YOUNG TEACHERS.

BY W. L. JAQUITH.

LITERATURE IN THE SCHOOLS.

AFTER the first strangeness and difficulty have in a measure worn off, comes a time when the earnest teacher looks about and says, "What can I do beyond the requirements of committee or superintendent for these under my care, these citizens that are to be?" It is by this attitude of intelligent self-direction that the true teacher is recognized? She brings whatever force or talent nature has given her to bear upon the possibilities of her situation, that she may waste none of them.

There is an imperative demand for special literary training in the schools. Every day sees a flood of new books issuing from the publishers' hands, and the amount of really good literature is small in proportion to the mass. Commonplace, worthless books are read by thousands of people, whose lives are shaped accordingly. It is the teacher's privilege to supplement home influence, to counteract it if need be; awakening in the child the power to understand and enjoy good literature.

Before mentioning special ways in which this may be done, I wish to dwell a little longer on the importance of the work. We all generalize largely from personal experience. So, dear fellow-teachers, take the matter home to yourselves for a moment. Look back over the hours of delight that your books have given you. Think of your joy in seeing your library grow, from small beginnings, by rare, carefully considered additions; of the days when you first made acquaintance with your favorite authors, the inspiration they brought, the earnest purpose



RAY GREENE HULING, New Bedford,
President American Institute of Instruction.

they awakened, as, read and re-read, their teachings sank deep into your heart. Think what a refuge in loneliness, a consolation in sorrow, a light in darkness, these silent teachers have been. Remembering all these things, you will strive to awaken in others a taste that has been of such blessing to you.

For the youngest children there are "memory gems" to be learned, and the reading aloud by the teacher. Much depends on the proper selection. There must be some experimenting, but you cannot go far wrong if you keep the standard well up to the limit of the child's appreciation. And a part of your work is to teach him to appreciate, to make him find the story in the poem, to see its pictures. Do not read down too far; it is possible to underrate the child's power. As for the memory gems, it does no harm if some are beyond his full com-

prehension. They are learned "not for school, but for life," and one day the opening mind will read the full beauty of the thought, and bless you for the gift.

In a few years entire poems may take the place of the extracts committed to memory. Do we not owe a debt of gratitude to the teacher who made us learn *Gray's Elegy*? Such productions seem an indispensable part of our mental furnishing, being so ingrained in our thought and literature that we meet them everywhere.

The school-work in reading and memorizing should influence the home reading. When the pupils are old enough, excellent results may be obtained by assigning a certain book for general reading, and devoting some time to its discussion. Nothing is more helpful than this friction of mind upon mind; each has something to contribute, and all are benefitted by the interchange of impressions.

In towns with good public libraries, it is now a common thing for teachers to aid pupils in the selection of books. In villages without public libraries, the teacher may in a measure supply the deficiency by a school library. This can be easily accomplished by some of the many methods which energetic teachers know for supplying school needs. Books thus obtained may be given to scholars in leisure hours as a reward for good behavior, and may be taken home.

Encourage older pupils to copy fine passages in extract books. This is an invaluable practice for the young student. It begets the habit of careful reading, and preserves treasures of thought for the mind to dwell upon and incorporate into its substance.

The daily reading lesson offers a magnificent opportunity, which in many cases seems almost wasted. What the average pupil needs to gain from his reading lesson is not the power to render an oft-repeated passage with the graces of the elocutionist, but to interpret *at sight* the author's thought, and give it intelligibly to a listener. If this end were kept in view, instead of the wearisome repetition of the uninteresting scraps that fill many reading books, we should have consecutive reading of entire productions, an undivided union between the study of "reading" and "English" in all grades, and an incalculable gain to the pupil in his extended knowledge of literature. The teacher who is free to carry out her own plans may do much in this direction by a broad range of supplementary reading, and by substituting consecutive reading from standard authors, for the compiled reading book, with advanced pupils.

Every means of realizing the author's personality should be improved. A glimpse of his home, the recognition of his birthday, biographical incidents, the picture of the man, all increase in no small degree the interest in his writings.

Perhaps the most effective work of all, is that which the teacher may do outside of school hours with older pupils, or the young people of the neighborhood. Vari-

ous kinds of reading clubs may be thus organized, with untold benefit to the members. Many a young person in whom literary taste seems at a hopelessly low ebb will rise, under sympathetic direction, to a loving appreciation of the masters. It is far better, however, that the training should begin in childhood, that there may be no false tastes to uproot. Few things are more sad than to hear a young person confess his inability to enjoy good reading, and say that none of his teachers ever gave him the slightest aid in that direction. Resolve that your pupils shall not have the opportunity to lay that sin to your charge.

I cannot close without mentioning a few helps which may possibly be of service to some who may read these words: The full line of standard authors for school use published by Houghton & Mifflin, and Miss Burt's admirable *Literary Landmarks*, which gives invaluable hints from the author's wide experience, and a helpful list of books for teachers' and pupils' reading.

ZACHARY'S FIRST YEAR IN SCHOOL.—(VI.)

BY SARAH L. ARNOLD.

BEFORE many days had passed, Zachary was himself again. He went back to his school, welcomed Miss Soule's return, and, spite of his anxious mother's fears, regained all his interest and earnestness in his school work. In fact, the habits and manners that he had obtained during the unfortunate interregnum seemed entirely forgotten and laid aside. There was magic in the young teacher's influence. Good throve in her presence as would flowers in genial sunshine and refreshing rain. She seemed never to look for evil, and it seldom intruded itself into her presence. All that was best in the children came out in their relations with their teacher. They forgot to be anything but good.

Miss Soule made no mention of the change in her school. She hardly acknowledged it to herself. If she saw that Mike Driscoll was even more lawless and rough than in the early days when he had not learned to know her influence; that Zachary had become idle and mischievous, and had forgotten many of his bright sunny ways; that the children read words and recited spelling, "measured" numbers "according to Grube," and sang rote songs with equal indifference, the wise little teacher made no sign. She was too gentle to condemn, even when she recognized the harm that had been done. She took up her work as if she had never been away from it, and the children fell readily into the old ways again. She expected them to be obedient; they did not disappoint her. She asked their best work; they gave it willingly. The old spirit of helpfulness returned. The lessons became alive with interest,—the days were short, the children happy.

Mrs. Deane rejoiced, as she watched Zachary's progress. The lad had found himself again, and his best self, at that. She had no misgivings while he was under Miss Soule's care. She knew he was growing.

It was late in February, almost March. The open winter had not hindered school going. The children ran about as freely as in the summer days. But Zachary woke one morning to find the world outside made new by a heavy snowfall, that was still at work, "heaping field and highway with a silence deep and white." The boy laughed aloud in his delight, and hurried to share the new pleasure with his mother. He was keenly alive to the beautiful in the world about him, and his mother found him an appreciative observer of the heavy laden pines, the fantastic fences, and the smooth drifted fields. The thought of the fun, even, was secondary, though Zachary liked boy's fun.

His first cloud arose with the suggestion that the roads would not be open, and that he must stay at home from school. He pleaded earnestly, with quivering lip, and waited, half in dread for the decision of his father, to whom the case had been appealed. What joy to learn that his father must drive past the school house,—that he would take Zachary, and bring him home in the afternoon. A lunch was to be provided,—and he would have the untried pleasure of "staying at school." What fun in being wrapped into a condition that defied snow and cold, and in sitting by his father's side, tucked under the buffalo robe, while the old-fashioned string of bells jingled with old Dolly's every step, as she plunged through the new snow. It was a new experience to Zachary,—a delightful one.

And Miss Soule was at the school house door, ready to meet Zachary, to reply to Mr. Deane's courteous words, and to promise to keep the boy until his father's return. She laughed at the ball of "comforters" and coats, from which Zachary emerged, and swept away the last snowflake from the little feet. The rosy face and eager eyes spoke his excitement and pleasure.

But where is the school? Mike Driscoll is here,—what snow could keep him away? His rough boots are wet to his knees. Susie Lane has come. She lives across the street. And Georgie Hayes came with Miss Soule. Nobody else. "What a little school! What fun!" Zachary thinks. Two or three others arrive before nine. The bell rings, and the little company find their places, looking at Miss Soule with wondering eyes.

"Is it worth while to have school just for us?" Mike asks. Miss Soule smiles her reply, and the morning exercises begin. The hymn is sung reverently, and the children's clear voices repeat the morning psalm with sweet thoughtfulness. Then Miss Soule draws the little group about her, and going to the window, she raises the sash, holds a slate outside, and shows to the wondering children the large snowflakes that have been drifted upon the dark surface. "Look, and tell me their shape,"

she says. Michael is first to see. "Oh, Miss Soule, here's one that looks like a star!" he cries eagerly, "and here's another, and another!" Zachary sees them, too, and the girls follow in their seeing. Miss Soule brings a large lens from her desk, and hands it to Michael, who already stands more erect in the pride of his discovery. He looks through it, and forgets everything but the beautiful figures before him. "Oh, see, see! They are all stars, and all different!" "Are they like the stars on our flag?" Zachary finds the difference. "These stars have six points," he avers. "And these stars are all trimmed up on the points of 'em, different shapes," Michael adds with interest. The children watch, question, and exclaim until the flakes are melted. Then they go to the board to draw all the different shapes. "I could cut snowflakes out of paper," Zachary volunteers. "Yes, we will do that by and by," his teacher replies.

The drawing done, the children gather again about their leader, and talking eagerly, in answer to her gentle questions, tell the story of the morning. It is easy to keep their thoughts on the new beautiful snow, and to lead them to tell why they rejoice in it. They find ready sympathy and appreciation as they describe the fun to be found in snowballing, building snow forts, making snowmen, and sliding on the crust. Perhaps that accounts for the like interest shown by the children when Miss Soule speaks of her pleasure in the beauty of the morning. The children go again to the window to look with newly opened eyes upon the white fields and the snow laden trees. "I like it," said Zachary, drawing a long breath. "And I wonder if God makes every snowflake in that field as beautiful as those we saw. There must be millions of them in all."

"Yes, Zachary, He makes them beautiful every one." "He must love beautiful things." "You wouldn't think," pursued Zachary, "that He would make it so lovely when nobody notices. But He sees them all, doesn't He?" "Yes, and He likes to have us learn to be glad in the beauty He has prepared for us," Miss Soule replies, not afraid that the children will fail to understand. Nor do they.

"I know something in a verse about snow," offers Susie. "I don't know the first of it, but it has 'whiter than snow' in it."

"Can anything be whiter than snow? Miss Soule?" Zachary asks, and then the children speak reverently of the clean hands and pure heart, of the spotless lives and white thoughts, which they would have for their own. Miss Soule does not preach. She is sincere and true. She asks questions which are gentle, thoughtful and earnest, and the children do the preaching.

'Tis time for gymnastics now and the children play that they are snowflakes, which the wind in the guise of Michael, is driving about. They read from the board the story of the snow. They make forms like snow crystals with the pags, and cut others from paper. At

Zachary's request, Miss Soule reads them the story of the "little sister —" who lives in the land of snow, and Mike resolves to be an Eskimo when he grows up.

Then there is hard work in numbers and spelling, and a quiet period for writing before the noon.

Such a happy noon! Such a generous lunch!—enough for Michael as well as Zachary. The latter is firmly persuaded that no warm dinner can be half so good as cold gingerbread, and determines to carry his lunch and stay every noon in future.

Miss Soule plays games at noon. She is chosen first, whosoever has the choice in all the games. The noon hour is short, Zachary thinks.

There is more reading—still from the board,—for there the thoughts seem alive. Then Miss Soule reads to the children,—not a fairy story nor a nursery rhyme,—but "Snow Bound." They listen, knowing no weariness, as the clear voice leads their thought to the beautiful picture. They laugh as they imagine the bridlepost transformed and dressed, or enjoy with the boys the snow tunnel. And then they listen to "The First Snow-fall," and repeat over and over the stanzas they like best until they become their own.

"I like a snowday," declares Zachary. "I wish they came every day."

"What shall we remember that we have learned today?" Miss Soule asks.

Each has some lesson from the snow. Mike remembers its purity, and the verse they learned about the pure in heart. And Zachary loves to think of the beautiful crystals—"so many of them." But the child does not know that every snowfall will bring back to him a precious thought, woven into his life by the sweet influence of his earnest teacher. Nor does she guess the worth of the long day spent so happily with the handful of scholars and the snow. But it was "worth while."

MODELING IN PAPIER-MACHÉ.—(I.).

BY ALBERT E. MALTBY, PH.D.,
Normal School, Slippery Rock, Pa.

AMONG the many substances which may be of service to the teachers of geography in the construction of relief maps, paper pulp occupies no insignificant place. This material is so clean, so pliable, and so easily manipulated, that teachers and pupils possessing but moderate abilities in the art of modeling can readily produce very serviceable relief maps; while the skillful operator may show results which will surprise all who are unacquainted with the various applications of the medium.

Few teachers are aware how easily good paper pulp may be prepared. The common waste sheets of paper from the pencil tablets should all be preserved, and when a quantity has been collected, the pulp can be made according to the following directions:

Tear the paper into small pieces not more than an inch square, and fill a common water-pail with the bits of paper. Over this pour three quarts of boiling water, and let the paper soak for about six hours. Pour off any excess of water, and macerate the mass, stirring it with a rough stick until the paper becomes pasty. By pressing the end of the stick down into the mass many times, the pulp may be made very smooth and fine, and will take impressions from the lines of the hand. Any of the boys in the class can readily learn how to prepare the pulp, and will soon take pride in preparing a fine grade of papier-maché for class use. The material may be kept in an earthen jar for any length of time, and additions made from time to time, as occasion may require.

It is not necessary to have white paper in order to prepare a good, serviceable pulp; common newspapers may be used in making a uniform pulp scarcely tinged with gray.

Relief maps should be molded upon boards specially prepared for the purpose. For use in the classroom, a very convenient form may be made by fastening thin boards together by strips or cleats at the back. Upon this molding board the outline of the continent should be drawn, using some convenient scale, say 200 miles to the inch. According to such a scale, South America

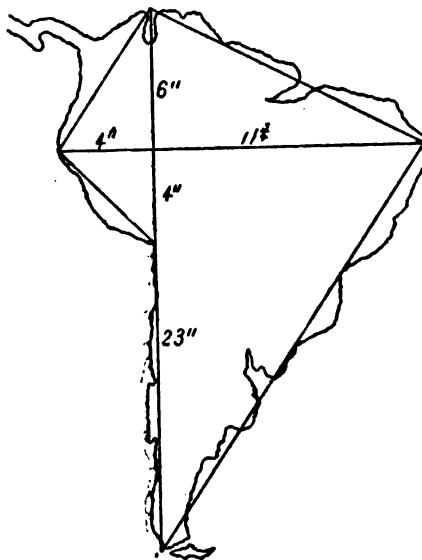


Fig. 1.

would be represented 23 inches long and $15\frac{1}{2}$ inches wide. If a set of relief maps of the continents be constructed, it will be well to adopt some uniform scale, since better ideas of the relative sizes can thus be obtained. (Fig 1.)

Having prepared the pulp and drawn the outline, the pupils are ready to mold the map. Three or more pupils may work at the map at one time, and the teacher should give each member of the class an opportunity to do some of the work, especially if but one large map is made at first. The pulp is spread out in a uniform flat layer about one-quarter inch thick, the pupils carefully modeling it up to the shore lines. The production of the map of the con-

tinent outlined in the flat will furnish enough work for one lesson period, but the children should be questioned in regard to the triangular form of the continent (South America), and the coast line unbroken by great gulfs or large enclosed seas. The regular matter of the general lesson upon the continent should be discussed by the teacher and other pupils while these are engaged in modeling the map.

The next day the pupils can locate the parts of the continent where the plateau sections are to be represented by somewhat increased thickness of the pulp (See Fig. 2).



Fig. 2.

These sections are: 1. The Plateau of the Andes. 2. The Plateau of Brazil; 3. The Plateau of Guiana.

Of these plateaus, that of the Andes is by far the most prominent. It should be represented on the map by an irregular band of increased elevation, varying from one half inch to two inches in width (scale 200), and stretching along the entire western coast. This should blend into the flat portion which represents the Great Central Plain, extending along the whole eastern base of the Andes, and interrupted only by the low plateaus of Brazil and Guiana. The great plain is usually considered under three divisions: 1. The Llanos of the Orinoco; 2. The Selvas of the Amazon; 3. The Pampas of La Plata. The watersheds dividing these sections are insignificant in elevation.

The pupils may now proceed to mold the mountains of the continent. Place quantities of the pulp in parallel ridges or lines along the western coast upon the Andean plateau. These will form the border wall of the plateau, and should be molded into peaks and elevations by means of a spatula or a common steel button-hook. The elevations should not exceed one-quarter inch in height. The Andean system should be formed of two lines of elevations in the central portion, of three lines at the northern extremity, and of one at the southern extremity. The general chain of the Andes is nowhere broken through, and thus the great mountain system forms a complete separation between the waters which fall into the Pacific and those which flow into the Atlantic.

The chief peaks of the Andes, such as Aconcagua, Illampu, and Nevada de Sorata, should be located, as should also the various groups of lofty volcanoes. The broad table-land of Brazil should be crossed by several irregular ranges of low mountains, the highest ranges situated along the southeastern coast. The mountains of Guiana, consisting of the Acarai and Pacaraima ranges, may be represented by elevations somewhat higher than those of Brazil.

Let the modeled map be now set aside to dry. In a few days there will be found upon the board,—in place of the seemingly rough work of the children,—a pure white map, upon which fairy fingers would seem to have been working to reduce and beautify the whole.

METHODS

PRIMARY READING.

BY WILL S. MONROE,
Superintendent of Schools, Pasadena, Cal.

THERE are three steps to be observed in teaching reading: First, teaching symbols for ideas already in the mind. This is done by associating objects with words a sufficient number of times to make the reappearance of one suggest the other. If the mental stimulus be strong, few repetitions will be required; if weak, the acts of association must be repeated a great number of times. If an effort is made to teach words, the ideas of which are not clearly in the mind, the process must, indeed, be a tedious one. The child's stock of ideas when he enters school is large, and the purpose of the primary teacher of reading should be to so train in the association of symbols (words) and ideas that the reappearance of the one will at once bring into consciousness the other. Objects, pictures, drawings, and stories aid in bringing about acts of association, and should be largely used in the first stages of primary reading.

The second step is sight-reading,—using words in sentences, recalling them at sight as wholes. Children must be trained to grasp whole sentences or their reading becomes a slow, measured, word-naming process. To make ready thought-getters, there must be much training in sight-reading.

The third step in teaching primary reading is training to get thought from the printed page. If the first and second steps have been carefully compassed, this is not a difficult part of the work. Thought-getting, and not thought-expression, is the end to be sought in this step. If the thought in all its bearings is clearly in the child's mind, the expression will take care of itself. Thought-getting, then, and not thought-expression, is the chief purpose of reading in the schools.

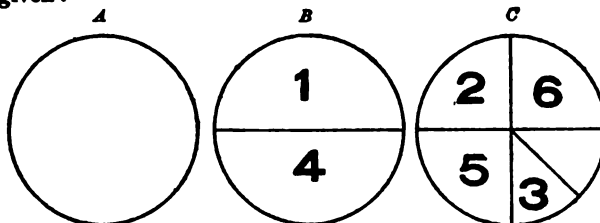
The teacher should ascertain by means of questions whether the thought is clearly in the mind of the child before she asks him to read it orally. If the pictures, the ideas that slumber behind the words and sentences are seen and appreciated, the child will get the thought and give it in a natural manner. The child that sees twenty little frogs around a log, and the old mother frog perched upon the log, will read the selection "Twenty Froggies," without any glaring defects in emphasis, pauses, or inflection. The trouble is that children do not get the thought, do not see the pictures, and they stand to read, and merely name the words.

All Readers are open to one grave criticism, they are scrappy in subject matter, and the words introduced are not repeated sufficiently often to fasten the word-forms on the mind. One lesson will be about a cat, another about a boy, and another about a flower. One lesson does not prepare the way for the lesson that is to follow; it should repeat most of the words in sentences of different forms. Julia McNair Wright's Nature Readers are the only ones, familiar to the writer, adapted to the primary grades, that can lay any claims to continuity. In these, there is a logical order of development along related lines of thought.

PERCENTAGE.

BY WM. M. GIFFIN, COOK CO. NORMAL SCHOOL.

I HAVE in my hand an apple. What do we call this outside part?" "The peeling." "If I take one half of the apple, what part of its peeling will I take?" "One half of it." "If I take one third, thus, what part of its peeling do I take?" (Continue with different parts.) "How many thirds has an apple?—fourths, tenths, hundredths? Yes, $\frac{1}{100}$, or we may say one hundred per cent. If then I take one half of an apple, or any object, what part of its one hundred per cent. do I take? What is one half of one hundred per cent?" "Fifty per cent." "One half of anything, then, is what per cent. of it?" "Fifty per cent." "I have five apples, and they are fifty per cent. of what I had yesterday. How many had I yesterday?" "If five equals fifty per cent. of them, then five must be one half, and all of them must be two fives or ten." Give other like questions, using thirds, fourths, fifths, sixths, etc. After the subject has been thus developed the following good oral drills may be given:



[The circles are to be drawn on the blackboard. They should be about four inches in diameter, that all may see them.]

- A is equal to what per cent. of B?
- A is equal to what per cent. of B and C?
- A is what per cent. of A, B, and C?
- 1 is what per cent. of B? Of 1?
- 1 equals what per cent. of A?
- 2 is equal to what per cent. of 1?
- 2 is equal to what per cent. of A?
- 2 is equal to what per cent. of A and B?
- 3 is equal to what per cent. of 2? Of 1? Of A?
- 2 is equal to what per cent. of A and 1? 5 is equal to what per cent. of A and 2? 5 is equal to what per cent.

of A , B , and C ? 6 is equal to what per cent. of A , C , and 1? 3 is equal to what per cent. of A , C , and 1? 2 is equal to what per cent. of A , 4, and 5? etc., etc.

I have \$3 and earn 50 cents more; what per cent. do I increase my \$3?

I have \$3 and spend \$1; what per cent. do I spend?

I have \$10 and pay \$6 of it for a hat; what per cent. of my money do I pay for my hat?

If to \$3 I add 25 cents, what per cent. do I increase my \$3?

I have \$49 in the bank, and draw out \$7; what per cent. is that?

If to \$40 I add \$1, what per cent. do I increase the \$40?

I have \$1; to this I add \$1; what per cent. do I increase the \$1? I next add \$1 to the \$2; what per cent. do I increase the \$2? Again I add \$1 to the \$3; what per cent. do I increase the \$3? Next I spend a dollar; what per cent. do I diminish my money? (Twenty-five per cent.)

George has 25 cents and spends 1 cent; what per cent. of his money has he left? Why?

Henry had thirty apples and ate one; what per cent. did he eat?

If four apples is fifty per cent. of all the apples I have, how many have I? Thirty-three and one third per cent.? Twenty-five per cent.? Twelve and a half per cent.? Twenty per cent.?

John has two piles of apples. In the first pile there are eight apples; in the second pile there are three apples. If he takes one from the first pile and adds it to the second pile, what per cent. does he diminish the first pile and what per cent. does he increase the second pile? Afterwards he takes the apple from the second pile and returns it to the first pile; what per cent. does he diminish the second pile and what per cent. does he increase the first?

A very interesting lesson can be given if the teacher will take some apples, or any other objects of equal size, and take from one pile and add to another, letting the pupils tell each time what per cent. one pile is diminished and what per cent. the other is increased.

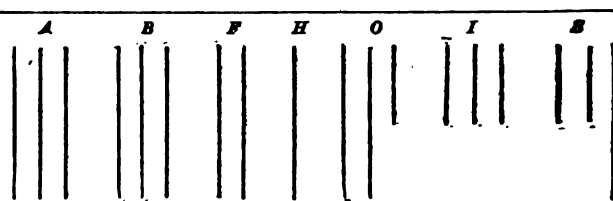
I have \$21 and spend \$19; what per cent. of my money do I spend? I spend $\frac{2}{3}$ of my money, hence I spend $\frac{2}{3}$ of its 100 per cent.; $\frac{2}{3}$ of 100 per cent. is $66\frac{2}{3}$, and $\frac{2}{3}$ is nineteen times $\frac{1}{19}$, or $1\frac{1}{19}$, which equals $90\frac{1}{19}$ per cent.

\$11 is what per cent. of \$13? $11\frac{2}{13}$ per cent. or $84\frac{2}{13}$ per cent.

\$4 is what per cent. of \$16? $25\frac{0}{100}$ per cent. or 25 per cent.

Draw lines on the blackboard as given here, and question as with the circles. Use letters unlike in sound so that the drill may be given rapidly.

A is equal to what per cent. of B ? Of F ? Of H ? Of O ? Of I ? Of S ?



F is equal to what per cent. of O ? O is equal to what per cent. of F ?

Five or ten minutes a day of such drill will do wonders for a class.

THE HOUSE WE LIVE IN.

BY MARY L. SAWYER, BOXFORD, MASS.

DID you ever wonder over the different colors of the earth carpets? Here is a bed of yellow clay, there a ledge of dark rock; sometimes you find black soil, and again you may ride for miles over a country where the ground almost makes your eyes ache, it is so red. Ordinarily these various colors are caused by iron, and our talk to-day shall be about this great earth painter. Iron makes the brick sidewalks red, and prepares the yellow ochre for the painters, but this is only its rough work, for the pale green of the beryls, the dainty brown pencillings of the moss agates, and the rich red of the blood stones are all due to this wonderful artist.

Iron is classed among the ores. An ore is a mineral valued for the metal it contains. Iron, lead, and copper are metals, and the rocks from which we obtain them are called iron ores, lead ores, or copper ores.

Sometimes a metal is found pure or native, (gold is almost always so found), but generally it is mixed with some other substance that has to be taken away before the metal can be made useful. To do this the ore is washed and crushed, and roasted and melted, and must go through many processes which we have no time to talk of here. In looking for iron, then, we shall not expect to find anything resembling the familiar substance we use in so many ways, but rough rocks which we will try to test. Weight is one test. A rock containing iron will be heavier than any of the minerals we have yet studied. But, though you think of it as very hard, iron ore is really softer than feldspar, very much softer than quartz.

Try your file on this heavy, dark colored rock. Notice, as you work, not only the hardness but the color of the surface exposed by the file and of the powder cut away. This freshly cut line is called the streak, the powder is streak powder, and the color is a most important test in determining iron. This rock is almost black, but the powder and the scratched surface are cherry red, and your rock is the kind of iron ore called hematite.

Another specimen may be a glistening gray, shining with a bright, metallic lustre; and a third a dull, reddish brown, earthy lump, but all will yield, under the file, the same red streak, and are thus classed together as hema-

tite. On the other hand, two specimens may look exactly alike outside, yet one will show the red streak of hematite, and the other a yellow streak, which proves it to be limonite, another and a very valuable ore of iron.

Perhaps your file will disclose a streak neither red nor yellow, but black, like the outside of the specimen. In this case put a little magnet into your filings (Fig. 1), and as the tiny particles cling to it you find you have still another ore, magnetite, or magnetic iron ore. Magnetite will be heavier than hematite or limonite.

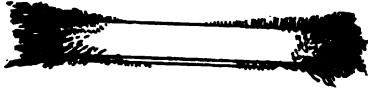


Fig. 1.

These three are the principal ores from which America's iron comes, but the iron which we who search the road side instead of the mine are most likely to find will be in the form of pyrite.

How many have noticed in common rocks little yellow particle that look like gold? These are bits of iron pyrites, and often deceive people who do not know that you can cut gold with a knife, while pyrites, unlike most other iron ores, is harder than feldspar, and will strike fire with steel. Often we find it massive, that is the whole rock body is pyrite, and again it is crystalized in one of these shapes (Figs. 2 and 3), and the crystals,

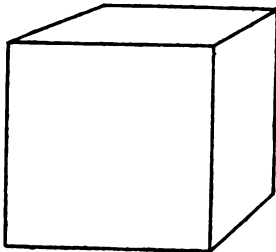


Fig. 2.

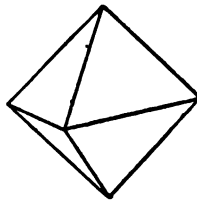
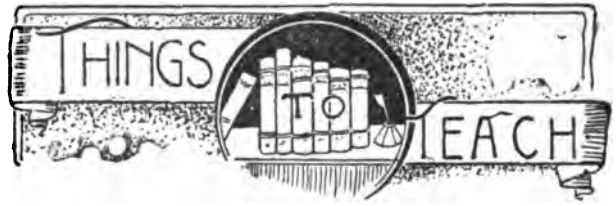


Fig. 3.

big and little, are packed into their rock bed like peas in a pod. It is found all over the world and in all kinds of rock, and if you cannot search for it out of doors a visit to the coal-bin will very likely show you specimens on the coal. Pyrite contains too much sulphur to be used as a source of iron supply, but it yields so much sulphur, sulphuric acid, and copperas that it ranks as a useful ore.

Bog iron, a variety of limonite, we may hope to find in our walks, a brownish black, earthy, somewhat porous rock often found in low grounds. If we find no ore, properly speaking, that is, no rocks containing iron enough to be profitably worked, we shall surely find many "iron ore rocks." The reddish rocks everywhere present contain iron in greater or less amount, and hard, compact pebbles, red or yellow clay, iron stones are not uncommon. Quartz crystals and quartz rocks are often colored by iron, "rusty crystals" you would call them; red chalk is iron; the black color of your slate is due to the same cause; in short, whenever you see a black or green or red or yellow stone, you may be pretty sure there is some iron about. You will find it hard to procure specimens in no way connected with iron.



THE CHILDREN AND THE POETS.

ARRANGED BY KATE L. BROWN.

WILLIAM DEAN HOWELLS.*



W. D. Howells

In August.

ALL the long August afternoon
The little drowsy stream
Whispers a melancholy tune,
As if it dreamed of June,
And whispered in its dream.

The thistles show beyond the brook
Dust on their down and bloom,
And out of many a weed-grown nook
The aster flowers look
With eyes of tender gloom.

The silent orchard aisles are sweet
With smell of ripening fruit;
Through the sere grass in shy retreat
Flutter at coming feet
The robins strange and mute.

There is no wind to stir the leaves,
The harsh leaves overhead;
Only the querulous cricket grieves,
And shrilling locust weaves
A song of summer dead.

For the children.

One day while calling upon Miss Elizabeth Peabody, the great champion of the kindergarten, I saw a pretty photograph of two little sisters. One was seated, a book

*Arrangements have been made with Messrs. Houghton, Mifflin, & Company for the use of this poem and portrait.

in hand. She was a quiet, thoughtful maiden. But the sister, who stood leaning over her shoulder, had a very arch, merry little face, and appeared to me as if ready to burst into laughter at a moment's notice.

They were the daughters of W. D. Howells, one of America's greatest novelists. Mr. Howells was born in Martinsville, Ohio, March 1, 1837. He is a very quiet, modest man, who says little about himself, and likes as little to be talked about. He has lived in both Boston and New York, and has also spent some time abroad.

When you are older you will enjoy reading his books. They are about real, every-day people, whose sayings and doings will seem very natural. Some people dress up their characters, and make them appear wonderful in every way. Not so with Mr. Howells,—he paints people as they are, making them just as lovely or unlovely, just as large or as mean as they are. On this account some people do not like him.

As I may not tell you much of this author as an author, you may be glad to know what kind of a papa he is. While the family were abroad his little Winifred took great delight in visiting the art galleries, and making drawings of the famous pictures. Her papa had these drawings published under the title, "A Little Girl Among the Old Masters." In the book he speaks of the drawings as a little girl's impressions of the old masters,—how they appeared to very young eyes.

What a loving and appreciative father he must be to have taken such an interest in the work of those child-hands. This same little girl, now a young lady, has gone on making pictures. If you will look over your files of *St. Nicholas* you will find a charming drawing of some little mermaids at play on the bottom of the sea, by Winifred Howells.

Mr. Howells is always busy learning from people, often studying them when they little realize it. His characters are real people that he meets,—on the horse cars, in the street, at restaurants. He does not have the appearance of watching people,—indeed he seems to be indifferent to what is going on about him. It is said that one of his little girls remarked on seeing a new portrait of him, "Papa, you look just as you do in the horse car when you want to listen and don't want folks to know it."

Mr. Howells lives at present in Boston, where he is writing new stories for *Harper's*.

For the teacher.

This poem is one of the few flights into song that Howells has given us. It is perfect in its artistic conception as well as in its rendering.

Talk to the children of the peculiar feeling in the air during the latter days of August. They will have noticed that the crickets begin to peep in a half sad way. Develop the idea that the stream is half dried from the summer heat; that it cannot sing and chatter as it did in April and May, or even in June. If possible lead the

children to see what a pretty idea is embodied in the latter part of the first verse.

The poor little brook remembers what a beautiful time June was, and how it danced and sang. Now it realizes that June is gone, that its own life is weakened. But it must dream of past joy, and it must whisper even in its dreams of vanished delights.

What is meant by

"Eyes of tender gloom"?

Do the children know that "aster" means "star"? Speak of the aisles of a church,—how the idea of the Gothic arch came from the tree trunks and boughs meeting overhead. What is meant by "sere grass," "aby retreat"? Why are the robins "mute"? Compare the toughened, dust-stained leaves of early fall with the tender leafage of early spring. What is meant by the "harsh leaves"? What does "querulous" mean? What does "shrilling locust" mean?

If these pictures are carefully developed, this poem will interest many of the children, and be a good means of increasing their expression. One must remember in all this kind of work that the children follow where the teacher leads.

LESSONS IN ZOOLOGY.*

BY CLARABEL GILMAN, JAMAICA PLAIN, MASS.

The Oyster.—(II.)

This lesson, which is mainly a review, may be given with the aid of the shells, according to the following outline:

Tell me some things about the oyster shell.

It has two valves. One valve is large and convex, the other is smaller and flat. The large valve was fastened to a rock. The shell is broad at one end and pointed at the other. The pointed end is called the beak. The outside of the shell is very rough, and the lines of growth show very plainly. There is a hinge not far from the beak, and a brown ligament.

What can you tell about the inside of the shell?

The inside of the shell is nearly smooth. It is white or yellowish. Near the middle is a large dark place made by the muscle. There is a pallial line near the edge.

The shape of the gills and the palpi may also sometimes be seen on the inside of the shell.

In what ways are the oyster shell and the clam shell alike?

Each has two valves. They have each a hinge and a ligament. Each has a beak. They have a pallial line. Each has a brown skin and lines of growth on the outside. They are made of layers of lime and flesh.

In what ways are they unlike?

The clam shell is smoother than the oyster shell. The oyster shell has the beak at one end, the clam shell has it

on top. The clam shell has both valves of the same size, but the oyster has one large valve and one small one.

If the children are old enough, they may now be led to see that while the left side of the mantle of the oyster can work steadily at shell-building, the right side is constantly interrupted in its work by the opening and closing of the valves, and that this accounts for the small size of the right valve.

Tell me in what ways the soft parts of the oyster are like those of the clam.

They have each a mantle and two pairs of gills. They have a mouth and two pairs of palpi. They have a heart.

Tell me some things that are unlike in the soft parts.

The oyster's mantle is open, and the clam's is closed. The oyster has one muscle, and the clam has two. The oyster's heart is close to the muscle, and the clam's is under the beak. I don't see why the oyster hasn't any foot nor any siphon.

Where does the clam live?

He buries himself in the mud. He digs down into the mud with his foot.

What use has he for his siphon?

He reaches up to the water with it.

Where does the oyster live?

He fastens himself to a rock. I see; he doesn't need a foot because he doesn't dig in the mud, and he doesn't need a siphon because his whole shell is in the water.

Oysters naturally live on rocks or hard substances (Fig. 2), and after the young ones swim about for a while, they die if they cannot find something hard to grow on, but they fatten better for the market on muddy bottoms, where there are great quantities of tiny plants for their food. So when

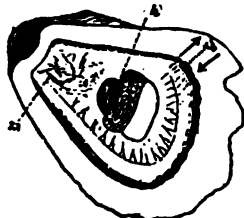


FIG. 1.

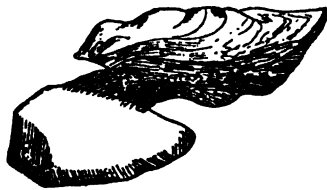


FIG. 2.

they are half grown, the oystermen take them up and "plant" them on the mud in some warm bay or at the mouth of a river, where they are left for a year or two. But they never dig in the mud, and so need neither foot nor siphon.

I should think the currents of water would get mixed if there isn't any siphon.

Is there any place where the edges of the mantle are joined together?

Yes, at the bar.

Then what is the use of the bar?

To separate the two currents of water.

One current flows in under the convex border of the mantle, passing over and through the gills, and carrying food to the mouth, the other flows out on the opposite side of the bar, as indicated by the arrows in Fig. 1.

As in the case of the clam and oyster, so with other mollusks the presence or absence of the foot and siphon is a sure guide to the habits of the animal.

MARCH SENTENCES.

BY GEORGIA HODSKINS, SPRINGFIELD, MASS.

HEAR the March winds blowing!

The ground is bare in many places.

We found some cup lichens in blossom on the old stone wall. Maple and poplar buds are swelling.

The alders are scattering yellow pollen from their tassels. Hear that humming noise!

The bees have found the first spring flower.

They are gathering pollen from the spathes of the skunk cabbage. Ned heard a wood frog croak yesterday.

This morning the little frogs (hylodes) were peeping in the meadow. The river is high.

Now we can see how the river changes its course.

See how the bank has caved in, on this side where the current is swiftest.

There, on the opposite side, is a long sand-bar.

Now the birds are coming back from their winter rest in the south.

The bluebird and robin were the first to return.

Tom saw a little flock of fox-colored sparrows. They will visit us a few weeks, and then go further north.

They will not sing for us; but in their northern homes they sing sweetly.

See my spring bouquet, brave little crocuses and snow-drops. I have a bunch of buds of the shad bush.

We saw some minnows darting about in the brook.

Mr. Woodchuck has waked up from his long winter nap. The sap is flowing in the maple trees.

The men started, this morning, for the sugar camp.

Flora saw a striped squirrel, on her way to school.

It sat on a limb of the old apple tree, and barked at her.

Mr. and Mrs. Kingfisher have returned.

They are digging a winding hole, four or five feet long, in the sand-bank. At the end they will make a soft nest.

The purple finch is a sweet singer; but he eats the buds from the fruit trees.

May saw the first fly this morning.

A golden winged woodpecker caught it for his breakfast.

Harry saw a flock of red-winged blackbirds near the edge of the swamp.

Last night we heard the wild geese honking.

The pewee is back again.

I found a long spray of mountain cranberry with its beautiful crimson leaves.

There is a chipping sparrow!

We gathered the tiny blossoms of the hazel; but they wilted before we could get them in water.

The men were ploughing the meadow, yesterday.

They found a meadow mouse and her nest.

There are some wild ducks on the pond.

Watch them dive.

Alice saw three or four little red butterflies.

We heard the song sparrow singing this morning.

"BUGS AND THINGS;"
OR,
Fred and Ethel at the Brookside.*

Water Mites.

BEFORE Fred left the summer camp he sent a letter to Ethel that she enjoyed very much. In it he told about a new friend. "Reynolds of Cal.," he called him, "and he likes bugs as well as we do, and knows lots more about them," he said. "We go about every day, and this afternoon he told me about a water-mite he found near his own home. It was fiery red, and looked like a drop of blood darting through the water. It had eight legs, and



looked like a small spider. Reynolds read somewhere that these mites hang on mussel shells, and others hang on the water skaters and live off them until they die. The grown-up tigers sometimes eat the mites, so they get paid up for their wickedness."

Ethel, of course, took her letter to Uncle Walter, and he was able to tell her more about them.

"They are so small," he said, "it almost makes me squint to watch them. Do you see these wrinkles here, Pet? That is how I happened to get them.

"Some of the mites have hard shells. I have taken them out of water and put them in a drop of water under a glass slide. They will at once fold up their feet and antennæ under their shells. Evidently they don't like to be on exhibition. I have read that in certain places in England the rocks are made up of these wee shells."

"Isn't it strange," murmured Ethel. "Somehow the world seems a more wonderful place since I came to Hollywood. I never knew how curious little things were before."

"You are growing; you are learning to use your eyes," said Uncle Walter, patting the round cheeks.

Water Lizards.

"See what Tommy Dodd gave me!" cried Ethel, one day, running toward her uncle, with a little bottle in her hands.

"Why, these are real water lizards," said Uncle Walter, with enthusiasm; "just what I've been looking for. Where did you find them, my boy?"



Tommy Dodd colored all over his bashful freckled face. "It was down under the stone bridge, sir, where the water is still and clear, and you can see bottom. I turned over a big stone, and there they were."

"Let me give you twenty-five cents for bringing us such a treasure," said Uncle Walter.

* The writer is greatly indebted to *Up and Down the Brooks*, published by Houghton, Mifflin, & Co.

"I don't want the money. I gave them to her because she likes bugs and I like 'em, too. She never laughs at me like the others, and calls me 'old freckle face,'" blurted the boy.

"We are much obliged," said Uncle Walter. "New the next time we go bugging, you must go, too,—remember!"

Tommy Dodd departed, filled with rapture, for he admired Uncle Walter, and bugs were the delight of his soul.

The two lizards were put into a bottle-home and watched with interest. They were pretty creatures, nearly three inches long, yellowish, with a black line running down the middle of each side. The tail was flattened and spotted with black. Each had two pairs of legs, with four toes on the front and five on the back. The eyes were dark, and there were three pairs of reddish-yellow gills. The gills stood up about the head very much like a lady's ruff.

Ethel fed her lizards on earth worms and little scorpion bugs. But they never seemed used to their new home. Whenever anyone came to look at them, they would race about the jar in perfect terror. After they had kept them about ten days, both were found dead one morning.

HOW TO TEACH THE MULTIPLICATION TABLE.

BY MARY J. N., WORCESTER, MASS.

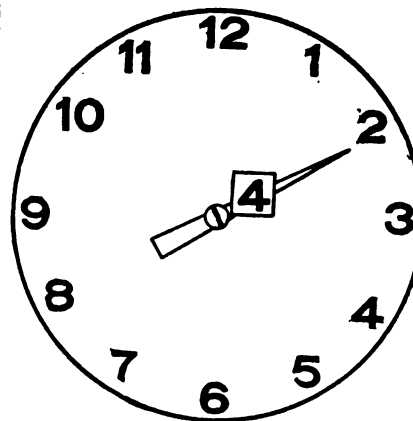
IN teaching the multiplication table I obtain the best results from a pasteboard clock. The clock I made from

a box which is used to keep web velvet in.

Cut the disc as large as possible then bind the edge with some pretty colored paper, to give it a neat finish. From an old calendar cut out the figures as far as 12 and paste on the pasteboard disc.

Now place a pointer in the center of the clock-face. This pointer may be made by pivoting a piece of lath on a screw, which passing through the center of the disc supports it on the wall. A pin is run through the pointer and a second set of figures as far as twelve prepared. These figures are to be hung on the pin, one at a time, and a rude device is at hand which will give any example in the multiplication tables.

As for example, if I wish to teach the table of 4's, I place the figure 4 on the pointer like this in the illustration.



tion. The pointer says, 2×4 are how many. The answer from the pupil will be given without a word from the teacher some thing like this: Two times four are eight.

This method I use for review work a great deal. Of course, to prove to a pupil what an answer must be, I use corn, beans, or pasteboard blocks.

THE OSWEGO PRIMARY.*

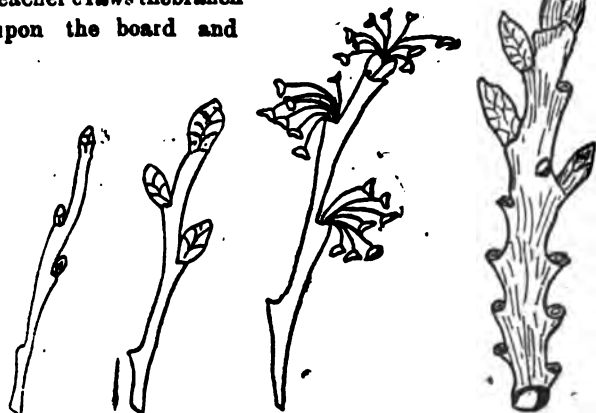
EDITORIAL OBSERVATIONS.

WE never made a better educational investment than in visiting the Oswego Normal School. In the lower primary rooms, there were many departments worthy of note.

The windows in February are filled with bottles, jars, or dishes of water, in which are placed branches of horse-chestnut, willow, maple trees, for leaf, bud, and blossom, and apple, pear, and cherry trees and currant bushes, for buds, blossoms, and fruit.

OBSERVE, DESCRIBE, DRAW

is the motto of the school, and the little folks study carefully these branches and their unfolding, and also the trees as they leaf, bud, and bloom in nature. They bring in the earliest branches that show signs of life. The children observe with great care. The teacher draws the branch upon the board and



Elm, Feb. 21. Elm, Feb. 23. Elm, March 2.

Poplar, Feb. 6.

writes the date when first observed. This drawing and record are left through the season, so that the drawings and dates make a valuable record of the leafing, budding, and blooming of the neighboring trees and shrubs.

The teacher also draws these in a book kept for the purpose, and taken together with the dates, year after year, they make a valuable book of reference.

The kindergarten pupils do not attempt to draw these, but the teacher pricks them, enlarged, on cardboard, and the child, with the specimen before him, selects his own silks and works the branch, nodes, buds, leaves, catkins, etc. This is the beginning of industrial art. The child

* Reprinted by request.

observes carefully, selects colors discriminately, threads and uses the needle skillfully, learns habits of order, neatness, cleanliness, etc. No description can give any idea of the educational value and serviceableness of this handiwork.

We present herewith *fac-similes* of the drawings in the teacher's record book. They are simply reduced in size in order to economize our space. These are also utilized for reading lessons by means of charts.



Horse Chestnut.
March 1. March 17.

March 23.

One very interesting chart I saw was on the *dandelion*. Another was a *cherry-blossom* chart, while others still were devoted to the *poppy*, the *frog*, and the *fly*.



Poplar, March 12.

Poplar, May 9.



For the present Mr. Winship will conduct this Department. He will be pleased to receive questions upon school discipline, administration, methods of teaching, and will answer the same personally or secure answers from experts. Teachers will please write their names and addresses, not for publication but that answers may be given by letter, if not of general interest. Will teachers ask questions with the pen as freely as with the voice?

68. *I have had hard luck in teaching "one," but I got along well enough with two, three, and four. What was my mistake?* O. R.

The trouble was in teaching "one" at first. You call "one" apple, "an" apple, and "an" or "a" means one to him. Teach the first numbers without saying so; simply see if they know what you mean when you tell George that he may take "an apple." Sarah may take "two apples," and Mary three apples. Never try to teach a young child the idea of oneness.

69. *I have much trouble with the careless use of small words, such as "but" for "and," "for" for "from," etc. What is the remedy?* NOT AN EXPERT.

Have pupils pronounce the sentence backwards.

70. *The pupils halt between the words. Why, and what can I do to remedy it?*

It is less important to know the "why" than the remedy. The reading of each sentence by itself, each pupil reading but one sentence, will help greatly. With a little care, this will be a remedy. If it is not, establish a rule that when a pupil halts, the next shall read on. This will usually wake up the greatest halter.

71. *I note that you say in the February number that you "certainly would not" allow a child to count on his fingers. Why not? How much worse is that than counting by spoons, or beans, or strokes on the blackboard?* SKERTIO.

It is no worse, provided a child carried a string of spoons or beans around with him for general use. There is danger in the use of any objects in the teaching of objects. The fingers are as good as any other ten objects, except that they are too handy afterwards. The child must be early divorced from using, handling, or imagining objects when he thinks of objects. I once heard Supt. J. M. Coughlin illustrate it in this way: I want to know how much a man owes me, and I have my account written thus:

For 15 apples, . . . 15c.

For 1 pound of nuts, . . 20c.

For 6 pencils, . . . 12c.

Now, I do not try to picture in my mind 15 apples and a pound of nuts and six pencils, but I use the facts that I have learned, that 12 and 20 are 32, and 32 and 15 are

47, and there is no imagination about it. The sooner I can know the abstract facts of addition, subtraction, multiplication and division, the better for me. If I must use objects to start me on the right track, I will do it, but I divorce my thought and imagination from them as soon as I can.

72. *I cannot make my children think when they are reading. How can I?* A FIRST TERM TEACHER.

That is a large question. You do not tell me the grade. I will assume that they have no trouble in pronouncing words. I would take a portion of each reading lesson, or two reading lessons a week, for special exercises to remedy this defect. I would use a book of lower grade than their Reader, or better yet, perhaps, the most familiar piece in their Reader. I would question them, and insist that the answer should be only in the language of the reading lesson. For illustration, the piece selected is:

" Blessings on thee, little man,
Barefoot boy with cheek of tan,
With thy turned-up pantaloons,
And thy merry whistled tunes."

Question.—What do I wish for the little fellow?

Answer.—"Blessings on thee, little man."

Q.—Whom do I want blessed?

Ans.—"Blessings on thee, little man."

Q.—What do I call the little fellow?

Ans.—"Blessings on thee, little man."

Q.—What kind of a man do I call him?

Ans.—"Blessings on thee, little man," etc., etc.

Take another selection from Daniel v. 19:

" Whom he would he slew.
" Whom he would he kept alive.
" Whom he would he set up.
" Whom he would he put down."

Read the first line to show his power:

" Whom he would he slew."

Read the second line to show the choice he had:

" Whom he would he kept alive."

Read the third to show that the power was his own:

" Whom he would he set up."

Read the fourth to show his freedom:

" Whom he would he put down."

73. *Will you give us a plan for teaching young pupils to write large numbers?*

A NOT INGENIOUS TEACHER.

I would not teach young pupils to write large numbers. They learn to write the first ten some time before they go higher; then with ease from 10 to 100; wait a little, and then go to 1000. All this before you talk much about writing numbers. Then from 1000 to 1,000,000, wait a little, practicing upon these numbers, and then teach the words "billion" and "trillion," their meaning and use, with figures. I would never teach above millions

until they were well advanced in the grammar grade, and would defer billion and trillion until the last year in the grammar grade, unless it was required earlier.

74. *Have we more than five senses, if so, what other?*
T. H. P.

This is a question of opinion. There is a large class that insist upon a muscular sense, and my own judgment is that it will eventually be incorporated with the sense of touch which will be broadened. But the argument made for calling it a distinct sense is one not easily answered at present. Industrial art and manual training experts are quite inclined to insist upon it as a special sense.

75. *What is the very first lesson in numbers.*

CURIOSITY.

There is no "very first lesson" to be determined by any one. Before beginning to teach numbers the children should have learned the use of the first twelve numbers. I think the first lesson that I should teach children, formally, assuming that they can pick out just as many plums or peppermints as I tell them they may have, under thirteen, would be that two and two are 4; that two twos are four; that three twos are 6. Four would be merely 2 twos; 6, 3 twos; 8, 4 twos; 10, 5 twos; and 12, 6 twos, before I taught anything else about them. Then 6 would be also 2 threes; 9, 3 threes; and 12, 4 threes. Then 10 would be 2 fives, and 12, 2 sixes. Then one half of 4 is 2; $\frac{1}{2}$ of 6, 3; $\frac{1}{2}$ of 10, 5; $\frac{1}{2}$ of 12, 6. Then $\frac{1}{3}$ of 6 is 2; $\frac{1}{3}$ of 9, 3; $\frac{1}{3}$ of 12, 4. Then $\frac{1}{4}$ of 8 is 2; $\frac{1}{4}$ of 12, 3; $\frac{1}{4}$ of 10, 2; and $\frac{1}{4}$ of 12, 3. Then 3 would be 3 ones, one and two, two and one; 5 would be 4 + 1, 1 + 4, 3 + 2, 2 + 2 + 1; 7 would be 6 + 1, 1 + 6, 5 + 2, 2 + 5, 4 + 3, and 3 + 4, 2 + 2 + 2 + 1, 2 × 3 + 1, 3 × 2 + 1, etc. My aim would be to keep up an interest in all the twelve numbers by their use; taking the idea that runs through several of them, rather than all the ideas in any one of them.

76. *How does the author intend us to use the "sentences" by Georgia A. Hodskins. Is it merely to write them on the board as facts?* JENNIE L., Unionville.

They are suggestive and are to be used in various ways. First, they are to be written upon the board to be read by the children. This is to give them a larger timely vocal vocabulary. Second, the sentences are to be read to the children and they are to write from dictation upon the board or upon paper. This is to give them a larger and more timely written vocabulary. Third, make a language lesson by having them restate each fact in different language; first orally, then in writing. See in how many different ways they can state some of them. These are rare sentences, in that they are seasonable, that they use a great many words not usually found in reading books, and they are at the same time the very

words they should know how to use correctly in speaking and writing. They give an excellent hint to reading-book makers of the possibilities of their art.

77. *My first and second grades have been going home an hour before the regular time for dismissal—two o'clock—and it would suit my convenience to keep them at school the whole five hours. Would it be too long for them?*

D. T. W., Beaufort, S. C.

I should be guided largely by local public sentiment. My own judgment is that four hours is as long as small children can be profitably kept in school, but no harm can come to them under ordinary circumstance if they remain for five hours, hence my advice. Be guided largely by local sentiment.

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The JOURNAL OF EDUCATION for Feb. 12 was devoted almost exclusively to Exercises for Arbor Day. A copy will be sent to any address on receipt of six cents in stamps.

To anyone who will cut this out and send it to us, with address and 25 cents in stamps, we will mail the JOURNAL OF EDUCATION, a sixteen page weekly, for TWO MONTHS, postpaid.

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THE AMERICAN TEACHER.

A. E. WINSHIP, } Editors.
W. E. SHELDON, }

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YOUR health is of first importance.

THE school year is more than half gone.

BE sure that the school in all ways teaches honesty.

SCHOOL sentiment in the community is of great value.

THE National Association will meet at Toronto, July 13-16.

Do not over-work either the pupils or yourselves in spring days.

PUPILS should not be allowed to sit "sliding down" in their seats.

THE American Institute of Instruction will meet at Bethlehem, N. H.

THE teacher should never plead lack of time. The great bankers, merchants, and professional men never do.

You should have a glow of friendliness for your fellow-teachers. Teachers as critics of teachers are out of place.

TAKE a few deep full breaths several times a day in good air, and see that the children all do it with the windows open.

WE aim to make the **AMERICAN TEACHER** so cordial in its tone that its monthly visits will be looked forward to with bright anticipations.

You can have the Arbor Day number of the **JOURNAL OF EDUCATION**,—February 12,—by sending six cents in stamps to the New England Publishing Co., 3 Somerset street, Boston.

THE article in the February number, entitled "Scrap Pictures," should have been credited to Harriet A. Ludington. The error is one for which it is useless to undertake to account.

SPECIAL TO BOOK-A-MONTH COURSE READERS.—The publishers of *The Evolution of Dodd*, which we an-

nounced, have gone out of the publishing business, so far as this book is concerned. It may be had for 25 cents by addressing the New England Publishing Co., 3 Somerset street, Boston.

RAY GREENE HULING, principal of the New Bedford High School and president of the American Institute of Instruction, whose portrait we present on another page, is one of the most deservedly popular and worthy educational men of New England. His local reputation was made upon his schoolroom work in Fitchburg. He took his stand as a leader through discriminating utterances upon several prominent issues. He has chosen as his specialty the study of educational problems from the historical standpoint, using an exhaustive study of history as the base line from which to project plans and purposes regarding the school of to-morrow. He has one of the best high school positions in New England, and has had the privilege of declining positions in Boston and other cities.

FEBRUARY PRIZE.

Although the prize offer in the *American Teacher* for January seemed to give little opportunity for variety in sentence-making, great ingenuity has been shown. Sentences have been received from pupils in the following states: Maine, New Hampshire, Vermont, Massachusetts, Connecticut, New York, Pennsylvania, New Jersey, Texas, Michigan, Missouri, Ohio, Wisconsin, Illinois, Indiana, Iowa, Kansas, Nebraska, Washington, South Dakota, West Virginia, California, and Nova Scotia.

The prize is awarded to Miss Leona B. Whittemore of Fayette, Me., who sent in the largest number of thoroughly good sentences. Others worthy of special mention, and who will receive some recognition, are Elliot Peterson and Lila Palmer, Seattle, Wash., G. Edgar Kline, Farmersville, Pa., and Fred McClure, Augusta, Ill. The largest number of sentences beginning with "February" was 1,023.

ARBOR DAY.

The school is a great national blessing through the observance of Arbor Day, which has as its mission tree planting and plant culture in the school-yard, home-yard, by the highway, and in the forests. It is now nineteen years since Nebraska inaugurated this economic custom, which aims to repair the ravages of extensive tree cutting by the setting and care for thrifty young growths. In no other way could this beneficial work have been accomplished. It is for the public schools, "that great circulatory system which gives life to the Republic," to spread the news and the interest broadcast. The Nebraska plan was not distinctively a school movement, this having been inaugurated in Ohio in 1882.

In 1831, Baron Richard von Steuben, the royal chief forester of Germany, who, with others of his family, was traveling through the United States, spoke on forestry, at a reception in Cincinnati. Some gentlemen who heard him became interested, met and organized, and began to lay the matter before the public by means of the press. In April, 1882, a three days' meeting was held in Cincinnati, at which many prominent foresters in the United States and Canada were present. The public schools were closed for two days, and pupils took part in the exercises. Since then, Arbor Day has come to be observed by most of the States.

BOOK-A-MONTH COURSE.

Froebel's Education of Man. A. Lovell & Co.'s Edition; price, \$1.50. D. Appleton's Edition; price, \$1.50.

We have already presented one of Pestalozzi's best books in this series, and now present one of Froebel's works. It must be understood that this book is a translation, and that delightful and valuable sentences flash unexpectedly from what appear to be dry and involved paragraphs. Many will be inclined to slight passages and pass others with all too little thought. We shall not be surprised if some readers leave the book unfinished.

Froebel was a philosopher. His aim was to educate the pupil through his self-activity. The child-mind grows by self-revelation. Through play he ascertains what he can do, discovers the possibilities of will and thought. In work he accepts the proclivities and inclinations of others. Froebel's system is an attempt to unfold the rational self and chain down the irrational. This the child must do for himself. It is self-conquest, thus true freedom.

SUGGESTIONS.

I should rather accept the thorough reading of the first two or three chapters of this book than the mere reading of the whole. It pays to reread sentences, paragraphs, and entire chapters of this book.

Do not attempt to answer questions beyond the point to which you have read thoroughly. If you have read but half the book, your paper will be judged from your answers to that point.

QUESTIONS.

[All answers are to be in very plain language, never using Froebel's language.]

1. Put in your own words, in the simplest way, his definition of education in the second section.
2. The same with the science of education.
3. The same with the theory of education.
4. The same with the practice of education.
5. To what should education lead?
6. In section 6, in the paragraph beginning "The failure to apply this truth," etc., what do you learn that will help you as a teacher?
7. Enlarge upon the comparison between plants and children,—section 8.

8. Do you find inspiration in the second paragraph,—section 12? Read it with great care.

9. Write not over five sentences upon section 20.

10. What do you think of section 27?

11. Do you agree with section 30?

12. Distinguish between the school and the school-room,—chapter iii.

13. What do you think of section 56? Treat it quite fully.

14. Do you appreciate his view of teaching natural science? 15. Mathematics? 16. Language?

A MARCH ARRIVAL.

(Bird Talks for the Children.)

BY GEORGIA A. HODSKINS.

A great many people go south, every winter. Can you tell me why? As soon as the cold weather is gone they come home again. But, the other day, before the cold weather had gone, while the March winds were blowing, I heard of the arrival of a visitor from the south.

I heard him, two or three days before I saw him. One morning, I found him. He was perched on the limb of an apple tree, down in the orchard. He wore a blue coat and a red vest and he was singing—oh, so sweetly! This is what he sang:—

"Daffodils, daffodils, say, do you hear?
Summer is coming and spring-time is here."

New, do you know him? Yet, it was the first bluebird. The male bluebirds come north first. And, about a week later, the females follow. In April they begin house hunting. What a gay time they have! Mrs. Bluebird flies about, looks in the martin-box, in the dove-cote, in the house that Mr. Woodpecker built for his winter home, and Mr. Bluebird follows after, as busy and as interested as she. At last, she finds a place which just suits her. It is a hole in the old stump, out in the field. Does he like it? Oh, yes; he is always pleased with everything she does.

Now they will build their nests. Mrs. Bluebird does most of the work, but her mate follows her and sings to her. Do you think he is praising her work? The nest is not very pretty; but it is soft and warm. It is made of wool, soft grass and feathers. In the nest Mrs. Bluebird lays four or five greenish-blue eggs. Later, when the little ones are hatched, both father and mother are kept very busy feeding and caring for them. Often after the first nestlings have left the nest, the old birds bring up another family in the same home.

Mr. Burroughs, who loves the birds and has written many interesting things about them, tells us that when the people from England first settled here, they saw and liked the bluebird, as we do. It made them think of the English robin, which is not like our robin, and so they called it the "blue robin."

THE PARTITION OF AFRICA.

BY WM. E. SHELDON, A. M.

THE eyes of the world are now turned toward Africa, long known as the "Dark Continent," from the fact that extended portions of its area had not been explored by civilized man. Since the search for Livingstone by H. M. Stanley and his more recent journeys in equatorial Africa, the great powers of Europe have been vying with each other in their efforts to secure territory that should be brought under their influence and control. The accompanying map is based upon one prepared for the Royal Geographical Society of Great Britain. This map will aid teachers and students to understand how the divisions of Africa have been recently parcelled out by the European powers. A careful study of this will show how the sections of the continent have been assigned by their recent agreements to the several European nations. Of course the boundaries are, as yet, still unsettled. For instance, there is a controversy between England and Portugal in relation to the interior region, south of the Zambesi River and west of Sofala, including Mashonaland and Manica. The "Anglo-Portuguese Treaty" has not yet been ratified, but from the fact that the natives have recently indicated their disgust for Portuguese rule and that the chief of Manica, "Mutassa" has sided with the claims of Great Britain, and has agreed to accept the protection of the British South Africa Company, it is evident that British influence will ultimately prevail, and the boundaries in this section be readjusted. There is also some dispute to be settled in regard to a section of country north of the Zambesi River.

There are in the whole of Africa about 11,900,000 square miles of territory, of which area only about two and one half million square miles remain unassigned to the protection of some European power.

The *Mouvement Géographique* contains a table showing the present area of the territory claimed by the various countries, including what are called their several "spheres of influence." The following are the summaries in square miles: Portugal, 774,993; Congo Free State, 1,000,000; Spain, 210,000; Italy, 360,000; France, 2,300,248; Great Britain, 1,909,445; Germany, 1,035,720. In addition to these sections are the countries of Egypt, Tripoli, Morocco, the Central States of the Soudan on the north and the Orange Free State and Transvaal on the south, the Republic of Liberia on the west coast, and what is known as the South African Republic. The principal possessions of Portugal are Angola and Mozambique. France controls Algeria, Tunis, Senegal and its dependencies, the Sahara, and Western Soudan, a portion of the gold coast and what is shown on the map as French Congo on the west coast. The island of Madagascar is also assigned to France, but her hold upon the island is by no means secure. The natives showing such a spirit of in-

dependence that there may be difficulty in overcoming their power.

Germany has in the "Cameroons" 193,000 square miles, in Damaraland 385,000 square miles, and East Africa 450,000 square miles.

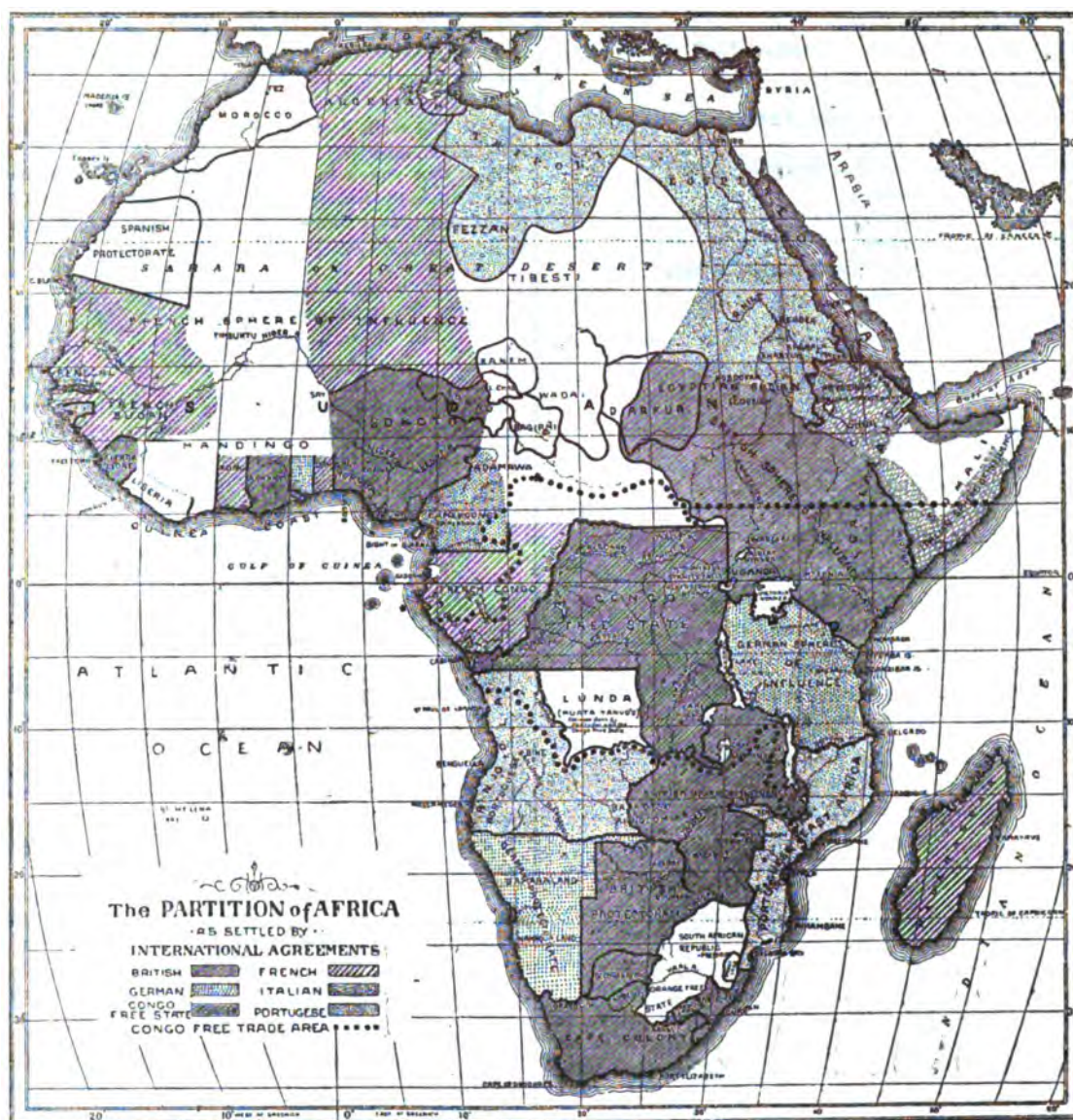
British Africa includes her west coast colonies, 445,000 square miles; Cape Colony, Basuto, Zulu and Bechuanaland, 500,000 square miles; Natal, 21,000 square miles; the South African Republic or Company and Nyasaland, 500,000 square miles; East Africa, 400,000 square miles, and the Somali Coast, 38,000 square miles.

By the above figures it will be seen that France has within her "sphere of influence" between three and four hundred thousand square miles more area of territory than any one of the other powers, but it will be remembered that much of her territory is desert, while Great Britain controls the best sections of the continent, and the value of her possessions out-rides that of any of the other powers. Germany probably is the second in rank, viewed from a political and commercial standpoint.

Italy's strip of territory on the east coast, extending from the Gulf of Aden to the Juba River has cost her dearly. A standing army has to be maintained against the Arab hosts adjacent, and nothing but a military occupation can be claimed. It is a question whether her "protectorate" over Abyssinia is very profitable. The future of the Congo Free State depends largely upon conditions that cannot be foretold. The commercial and political interests of the whole civilized world combine to open the equatorial section of Africa by means of railroads connecting the west coast with the great inland lakes. Belgium began the work, but it is doubtful if so small a power of Europe will be able long to hold her African positions of influence even on the Congo and its tributaries.

The British, Germans, and French are sending expeditions to the West African coast to act together in establishing the boundary lines of their frontiers.

The French explorer, M. Crampel, has gone up the Congo River to the Mobangi River, hoping to cross the country to the Shari River and follow it down to Lake Tchad, and return across Sahara to Algiers, which will open to the world important geographical information. This region is now almost a white spot on the map. Explorations are going on along all the navigable rivers of the Congo basin. The opening of Mashonaland by the British South Africa Company promises a vast region of rich mining country. It is thought to be richer than any section of South Africa. This is a most desirable section, capable of furnishing thousands of Europeans with healthful homes. Great Britain has an open eye for such colonies, and is ever ready to occupy territory that will yield her revenue. No nation has won such colonial success. She seems to select the best positions for the promotion of her political and commercial interests. Canada, India, and Australia are illustrations of her diplomatic shrewdness.



I CAN'T AND I CAN.

Tune, "You can't do it, you know."

BY ADA SIMPSON SHERWOOD.

IN school with its duties too often 'tis said,
 "I can't do it," you know;
 Much better to substitute these words instead,
 I can do it, you know.
 I can do it, you know.
 I can do it, you know.
 Much better to substitute these words instead,
 I can do it, you know.

O do not give up on that difficult task,
 For you can do it, you know;
 You lose your own strength when assistance you ask,
 And you can do it, you know.
 You can do it, you know.
 You can do it, you know.
 You lose your own strength when assistance you ask,
 And you can do it, you know.

I can't is an idler, will never succeed,—
 I can't do it, you know;
I can has the courage which all of us need,
 And you can do it, you know.
 You can do it, you know.
 You can do it, you know.
I can has the courage which all of us need,
 And you can do it, you know.
I can't steals our energy, courage, and skill,—
 I can't do it, you know;
I can brings success with his brother *I will*,
 And you can do it, you know.
 You can do it, you know.

You can do it, you know.
I can brings success with his brother, *I will*,
 And you can do it, you know.

O do not submit to this coward, I pray,—
 I can't do it, you know;
 When a task is assigned you then speedily say,
 I can do it, you know.
 I can do it, you know.
 I can do it, you know.
 When a task is assigned you then speedily say,
 I can do it, you know,

OUR FLAG.

BY ADELLA L. BAKER.

THE stars are two and forty-two,
 And set against a sky of blue,
 To teach us all we must be true.

The stripes of white are for the right,
 For which we'll work with all our might,
 As those who live in freedom's light.

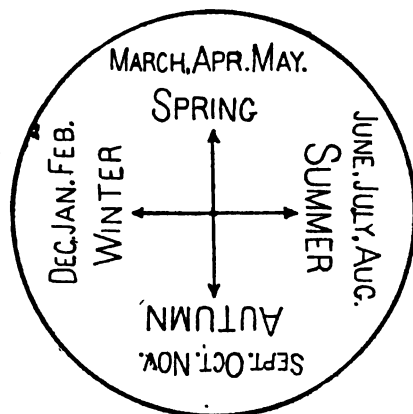
If any foe to our dear land
 Shall rise in war, a cruel band,
 Then for our lives the red stripes stand.

Three lemons, then, our flag will teach,
 In color signs, if not in speech,—
 "Be true, just, brave," it says to each.

THE PLAY OF THE SEASONS.

BY MARY REGINA POLLOCK, COETLAND, N. Y.

DRESSED in the various costumes, as given below, the children enter and take their positions so that with four children in the center of the group, each has three behind him, forming a sort of square:



Standing thus they sing, "Song of the Fairies;"

"Let us laugh and let us sing,
 Dancing in a fairy ring;
 We'll be fairies on the green
 Dancing in a fairy ring," etc.

— *Cheerful Echoes.*

The Seasons in the center cross hands and walk around in the ring; the twelve months join hands, going round to music in the opposite direction. The Seasons, after having found their own places again, lead off, each into a different corner of the stage or space in the room devoted to the play, and followed by its own train of Months.

Then they march to the center again. This movement is repeated; then the Seasons,—after coming back to the center,—join hands, each Season with its own train of months, making a tableau. Standing still, they sing:

"Robbie shall be Winter wild,
 Helen may be Spring time mild;
 We'll be fairies on the green,
 Dancing in a fairy ring."

Each Season now forms a separate ring with its train of months. They walk round in these four rings; then each ring opens. They all form one large circle, and sing the last verse:

"Faster, faster, round they go,
 While our cheeks like roses glow;
 We are fairies on the green,
 Dancing in a fairy ring."

While still singing, Spring runs with short steps around in the ring, goes to her place, when Summer does the same; Autumn takes her place, and then Winter, each returning to its own place before the next one commences. Each of the twelve months in turn do the same. Each Season, this time, provided with decorated staffs, one in each hand, steps into the ring, and, with outspread arms, crosses wands, forming arches. January leads the twelve months in and out among the staffs of the Seasons once or twice, then reverses in the same manner. Finally they go around the outside of the four Seasons and from the room, followed by the Seasons.

If more time can be given, then each Season can bring in its own appropriate song, for instance, "Spring Song," (page 50, *National Kindergarten Songs*):

"How lovely, how lovely,
 That spring has come round,
 When daisies and violets
 Again may be found," etc.

Summer has its "Mowing Song":

"Under the spreading apple tree,
 Hish, swish, grass is falling;
 Overhead, rocking in the breeze,—
 Hark! hark! birds are calling."

— *Cheerful Echoes.*

Autumn—"Hurrah! hurrah! the autumn now is here," etc.

Winter—"Skating Song," (from *Cheerful Echoes*):

"Stars so bright, moonlight night;
 Cold and clear the air,
 'Tis not late, come and skate,
 And for sport prepare," etc. etc.

THE COSTUMES.

January: conspicuous for snowflakes and tiny sleigh bells.

February: with valentines covering the dress.

March: simple, with green sash in honor of St. Patrick.

April: carries a dainty umbrella and waterproof,

May: white blossoms and a May pole.

June: roses on her garments.

July: red, white, and blue.

August: has a small bundle of hay on his back.

September: has a pretty basket of fruit, well fastened in.

October : a profusion of autumn leaves.

November : carries a branch without leaves.

December : is artistically decorated with branches of holly.

SEASONS.

Spring : wears a lovely crown of pansies, and has bunches of violets fastened on her dress.

Summer : wears a crown of daisies, and is gorgeous with other summer flowers.

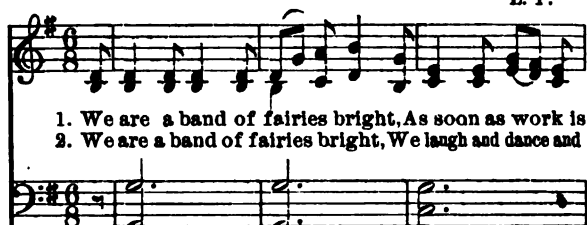
Autumn : dressed in red and yellow, with small bunches of wheat around his costume.

Winter : glistens with frost.

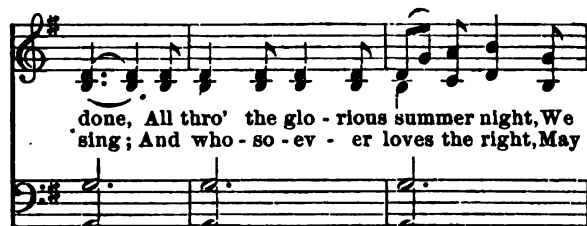
This song can be introduced with charming effect in connection with the Play of the Seasons :

FAIRY PLAY.

L. P.



1. We are a band of fairies bright, As soon as work is
2. We are a band of fairies bright, We laugh and dance and

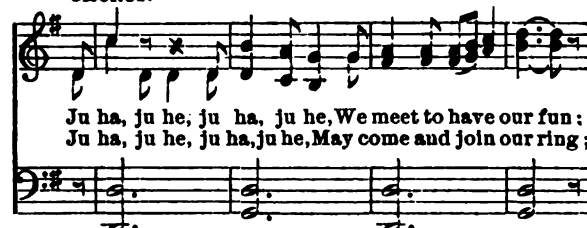


done, All thro' the glo - rious summer night, We
sing; And who - so - ev - er loves the right, May

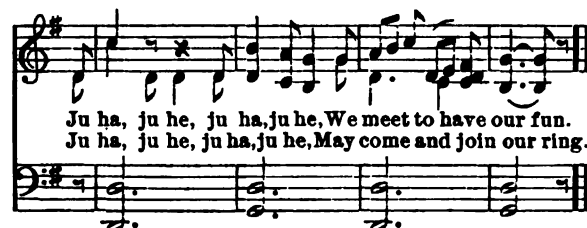


meet to have our fun, We meet to have our fun;
come and join our ring, May come and join our ring;

CHORUS.



Ju ha, ju he, ju ha, ju he, We meet to have our fun;
Ju ha, ju he, ju ha, ju he, May come and join our ring;



Ju ha, ju he, ju ha, ju he, We meet to have our fun.
Ju ha, ju he, ju ha, ju he, May come and join our ring.

From "Cheerful Echoes."

With the chorus, "Ju, ha, ju he," they swing their arms and hands gracefully to the right and left. (A dancing step with the feet accompanies the hand motion, but may not always be practicable with very small children.)

EXERCISES FOR SMALL CHILDREN.

1. A plump little robin flew down from the tree
To hunt for a worm which he happened to see.
2. A frisky young chicken came scampering by,
And gazed at the robin with wondering eye.
3. Said the chicken : " What a queer-looking chicken is that ;
Its wings are so long and its body so fat ! "
4. While the robin remarked loud enough to be heard :
" Dear me ! an exceedingly strange looking bird. "
5. " Can you sing ? " robin asked, and the chicken said " No, "
But asked in its turn if the robin could crow.
6. So the bird sought a tree and the chicken a wall,
And each thought the other knew nothing at all.

EXERCISE FOR EIGHT CHILDREN.

1. How do the leaves grow
In spring upon their stem ?
2. The sap swells up with a drop for all,
And that is life to them.
3. What do the leaves do
Through the long summer hours ?
4. They make a home for the singing birds,
A shelter for the flowers.
5. How do the leaves fade
Beneath the autumn blast ?
6. Oh ! fairer they grow before they die,
Their brightest is their last.
7. How are we like leaves,
O children weak and small ?
8. God knows each leaf of the forest shade,
He knows you each and all.

EXERCISE FOR FOUR CHILDREN.

1. I had a little yellow bird
(Concert.) Upon a summer's day ;
2. He sat upon my finger
(Concert.) And he never flew away.
3. He fluttered and he fluttered,
(Concert.) And he fluttered all the day ;
4. But he never sang a song,
(Concert.) And he never flew away.

THE GRASS.

(Class Exercise by Young Pupils.)

1. Here I come, creeping, creeping everywhere ;
2. By the dusty roadside,
3. By the sunny hillside,
4. Close by the noisy brook,
5. In every shady nook,
(Concert.) I come creeping, creeping everywhere.
6. Here I come, creeping, creeping everywhere ;
7. All around the open door,
8. Where sit the aged poor,
9. Here where the children play
10. In the bright and merry May,
(Concert.) I come creeping, creeping everywhere.

11. Here I come, creeping, creeping everywhere;
 12. In the noisy city street,
 13. My pleasant face you'll meet,
 14. Cheering the sick at heart,
 15. Toiling his busy part, —
- (Concert.) Silently creeping, creeping everywhere.

16. Here I come, creeping, creeping everywhere;
 17. You cannot see me coming,
 18. Nor hear my low sweet humming;
 19. For in the starry night,
 20. And the glad morning light,
- (Concert.) I come quietly creeping, creeping everywhere.

21. Here I come, creeping, creeping everywhere;
 22. My humble song of praise
 23. Most joyfully I'll raise
 24. To Him at whose command
 25. I beautify the land, —
- (Concert.) Creeping, silently creeping everywhere.

JACK FROST'S LITTLE SISTER.

HIS morning when all the rest had gone down
I stood by the window to see
The beautiful pictures which there in the night
Jack Frost had been making for me.

There were mountains and mills and bridges and boats,
Some queer looking houses and trees,
A hammock that swung by itself in the air,
And a giant out off at the knees.

Then there was a steeple so crooked and high,
I was thinking it surely must fall,
When right down below it I happened to spy
The loveliest thing of them all, —

The cutest and cunningest dear little girl,
I looked at her hard as I could;
And she stood there so dainty and looked back at me,
In a little white ulster and hood.

"Good morning," I whispered, for all in a flash
I knew 'twas Jack Frost's little sister;
I was so glad to have her come visiting me,
I reached up quite softly and kissed her.

There! can you believe it? — the darling was gone,
Killed dead in that one little minute!
I never once dreamt that a kiss would do that,
Nor could there be any harm in it.

But I am so sorry! for though I have looked
Fifty times at the window since then,
Half hoping to see her once more, yet I know
She never can come back again.

And it may be foolish, but all through the day
I have felt, — and I knew that I should, —
Just as if I had killed her, that dear baby-girl
In a little white ulster and hood.

— *Youth's Companion.*

— Galloping, galloping, galloping in,
Into the world with a stir and a din,
The north wind, the east wind, and west wind together,
Inbringing, inbringing, the March wild weather,



[The teacher will find it pleasant, as a variety, to silently read the stories, or selections, then repeat in her own language before the class, which in turn reproduces, orally or in writing.]

REPRODUCTION EXERCISES.

BY M. E. C.

WHITTIER'S SNOW-BOUND.*

[Adapted.]

[Third year primary and lower grammar grades.]

[To make a success of the exercise given below, the teacher should provide herself with pictures of the poet, his homes, and any others illustrative of periods of his life.† The entire selection should be read to the children, and the sentiment expressed carefully analyzed, after which portions may be copied by the pupils from the blackboard. Whenever the copying occurs, an oral expression of the mental picture gained should be made. When the various selections have been considered, an oral lesson covering all the previous day's work should be developed.]

I. The sun that brief December day
Rose cheerless over hills of gray,
And, darkly circled, gave at noon
A sadder light than waning moon.
* * * * *
A chill no coat, however stout,
Of home-spun stuff could quite shut out.
* * * * *
The coming of the snow-storm told,
The wind blew east; we heard the roar
Of Ocean on his wintry shore,
And felt the strong pulse throbbing there
Beat with low rhythm our inland air.

II. Meanwhile we did our nightly chores, —
Brought in the wood from out of doors,
Littered the stalls, and from the mows
Raked down the herbs-grass for the cows,
Heard the horse whinnying for his corn;
And sharply clashing horn on horn,
Impatient down the stanchion rows,
The cattle shake their walnut bows.

III. The gray day darkened into night, —
A night made hoary with the swarm
And whirl-dance of the blinding storm,
As zigzag wavering to and fro
Crossed and re-crossed the winged snow;
And ere the early bedtime came
The white drift piled the window-frame,
And through the glass the clothes-line posts
Looked in like tall and sheeted ghosts.
* * * * *
So all night long the storm roared on;
The morning broke without a sun.
* * * * *

IV. All day the hoary meteor fell;
And when the second morning shone,
We looked upon a world unknown,
On nothing we could call our own.
* * * * *

*Arrangements have been made with Messrs. Houghton, Mifflin, & Company for the use of this poem.

† Very good pictures may be found in back numbers of magazines, or one may obtain an illustrated catalogue of some large publishing firm. The well mounted photographs and small etchings in the market are expensive but valuable aids to the language lessons.

The old familiar sights of ours
Took marvelous shapes; strange domes and towers
Rose up where sky, or corn-crib stood,
Or garden-wall, or belt of wood;
A smooth white mound the brush-pile showed,
A fenceless drift what once was road;
The bridle-post an old man sat
With loose-flung coat and high cocked hat.

V. With mittened hands, and caps drawn low,
To guard our necks and ears from snow,
We cut the solid whiteness through;
And, where the drift was deepest, made
A tunnel walled and overlaid
With damling crystal; * * * * *

We reached the barn with merry din,
And roused the prisoned brutes within.
The old horse thrust his long head out,
And gazed with wonder gazed about;

**The oxen lashed their tails, and hooked,
And mild reproach of hunger looked.**

VI. All day the gusty north winds bore
The loosening drift its breath before;
(And) As night drew on * * * * *
We piled with care our mighty stack
Of wood against the chimney back.
* * * * * then, hovering near
We watched the first red blaze appear
(And) Shut in from all the world without
We sat the clean-winged hearth about,
Content to let the north wind roar.

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"I DON'T CARE."

[Adapted.]

[For first year's workers in primary schools. Read once, reproduce orally.]

Elsie is a little girl who has a bad habit of saying, "I don't care." One day Aunt Mary said to her, "Elsie, will you do an errand for me?" "Oh, yes, ma'am!" cried she; "what is it?" "Take your naughty 'don't care' away up in the garret and hide it." Elsie laughed, and then looked very sober. Then she said, "I will, Aunt Mary;" and away she ran. She must have hidden it very carefully, for she hasn't found it again.

BABY ROSE'S WINTER NAP.

[Adapted.]

[This may be read to the second and third primary grades, and reproduced orally with the one and in writing with the other.]

Last fall, when the cold frosts came, one brave little bud that was trying to be a rose grew quite black and fell off the stem. Very soon all the leaves fell, too, and the children said, "This frost has killed the rose-bush." They did not know that there were baby roses sleeping on the old rose-bush. If they had looked closely they would have found tiny brown cradles, quite different from the one in which Baby Crocuses takes her winter nap. These rose-cradles are very little, and brown, and made of a good many layers of something like very thin, rough, brown paper. The whole is made snug by these layers being stuck tightly together.

When the weather grew very, very cold, Mother Rosebush, Baby Rose, cradles and all were covered with a warm coat of straw. As the spring sun grows quite warm, Baby Rose will wake up, and the straw will be taken off. Next a tiny little green hand will be thrust out of each little cradle. Old Mother Rose will be kept busy feeding each waking baby with a kind of juice which she brings up from the ground in some wonderful way. The babies will grow stronger and stronger, and pretty soon will stretch a great many green hands out into the sunshine and air.

At last, some Jane morning, a sweet little pink face, all washed in dew, will be lifted up, and the children will say, "Why, the rose-bush is not dead! Here is the sweetest rose that ever was seen."



THE GRAB-BAG was a notable feature of the church fair of our younger days. You paid your money, and you got, not your choice, but your luck. The element of attraction was that you always got something. Some Agencies are carried on in this way. By hook or crook they get a great many teachers' names, often by free registration, and a registration fee to be paid when the teacher is needed. By hook or crook they get information of a great many of our supposed vacancies. By notifying in a wholesale way some forty or fifty of these possible vacancies they fill a great many. We have been lucky in this kind of a draw out of the grab-bag in high school. In the testimonial, if it drew a raggedy old man, the baby it swears against all Agencies, it keeps your quiet about it. Well, we have had a fair of the Mirima Free Academy, came to us in 1890 for \$550 and \$600. We told him we couldn't fill the first ninety-two candidates for the second. One of these was a girl, but she got the place and she filled it well. Now or then, either place. Now it seems to us that this is a worse way of getting our most choice to suit him than a good old-fashioned examination. **TEACHERS AGENCIES.**

WILL IT PAY *Life to register?* That is after all the main question with teachers. They know the best places are filled by Agencies, and that some men and women are thereby promoted with great rapidity. But a good many teachers register and do not get places. How can a teacher tell beforehand whether the Two Dollars is a wise investment?—Well, in the first place, he can't tell for certain. He can estimate his chances in all kinds of ways. If a man wants to be absolutely on the safe side he must ever spend a penny except for the bread that he eats and the clothes that he wears, and he must buy them over the counter, getting them when he pays for them. An Agency may be a good thing, and a good thing for you, and yet fail to get you a place the first year or two. But there are certain general principles for those who understand, that some investment: are wise even when they do not positively ensure immediate returns which an experience of eight years. **ME** register. They may get one place through an Agency, and then they never get another through it. An Agency may get a teacher for a candidate, and it keeps a watch on his work after they are placed. (2) It doesn't pay for teachers who have "proved failures" to register. Some teachers seem to think that this is what an Agency is for: to provide places among strangers for those who can't get places where they are known. Not a bit of it: the Agency usually finds out what your record is. (3) It doesn't pay *greedy* teachers to register, who want to get twice as much salary as they can earn. We try to get for teachers all their qualifications and experience fairly deserve, but we should be very sorry to put a \$500 teacher into a \$1000 place. We have duties to perform, and we don't want to do them for nothing. (4) It doesn't pay *greedy* teachers to register. Our worst trouble is with teachers who ask for a certain kind of place and then refuse **TO REGISTER?** it when offered. But apart from those four classes, we believe it pays every teacher to register, and to keep registered.

MORAL Send us Two Dollars, and your name will be entered at once, and blanks forwarded to you to be filled up by you with the information necessary to secure the place you are best fitted for.

School Bulletin Agency, C. W. Bardeen, Syracuse, N. Y.

Notes and Queries.

Questions and answers for the Notes and Queries should reach us by the first of each month. We respectfully request all the readers of **THE TEACHER** to take part in the discussions of this department. Send in questions, and furnish answers to questions given.—Eds.

ANSWERS TO QUERIES.

711. What is meant by "He has gone up Salt River"?

"Salt River" is a small stream in the north central part of Kentucky, flowing north into the Ohio some miles west of Louisville. At "Pitts Point" it receives the waters of "Rolling Branch." Many years ago, so goes the story, in the administration of General Jackson, the Postmaster General desiring some accurate information as to the point where "Salt River" flows into the Ohio, wrote to the postmaster of "Pitts Point," and in his letter asked, "Where does Salt River run up?" The Pitts Point postmaster, being a wag, seeing an opportunity to perpetrate a joke upon his superior, replied in a curt note, "Salt River does not run up; it runs down." The next mail from Washington, brought a letter from the postmaster general to the postmaster at Pitts Point, which contained only the following laconic sentence: "Sir, the U. S. Government has no further use for your services." A facetious fellow, being asked what had become of Mr. Blank, the postmaster, replied that Old Hickory had sent him up Salt River. Since then, the expression, "Up Salt River," has been applied to a person who has occupied an office or place under government, and has been displaced either by the appointment of a new occupant or failed to succeed in a reelection. But it does not apply to the defeat of a new candidate.

D. R. W., *White Plains, N. Y.*

724. "Can an image produce an image?" This comes under the subject of light in philosophy.

If an object is placed between two plane parallel mirrors, each one produces an image of its own and reproduces the image reflected from the other. This image of an image is again reflected by each to the other until by successive reflections, the rays are no longer discernable. If the mirrors be at right angles to each other an object will produce three images. One made by each and one a reflection from both. If placed so as to form an angle of 60°, five images will be made; 45° will produce seven images.

E. McC—Y, *Ripley, Ohio.*

739. A company dining at a house of entertainment had to pay \$3.50, but before the bill was presented, two of them left, in consequence of which those who remained had to pay each 20 cents more than if all had been present. How many persons dined?

H. G. M., *Saxonville, Wis.*

Let x = number of persons who dined. $x - 2$ = number of persons who remained to settle the bill.

$\frac{\$3.50}{x}$ = am't each one who dined should have paid.

$\frac{\$3.50}{x-2}$ = am't each one remaining paid.

$$\frac{\$3.50}{x-2} = \frac{\$3.50}{x} = \$20.$$

Clearing equation of fractions and transposing gives: $x^2 - 2x = 35$.

Completing square, $x^2 - 2x + 1 = 36$.

Extracting square root, $x - 1 = 6$.

Transposing, then $x = 7$. Number who dined.

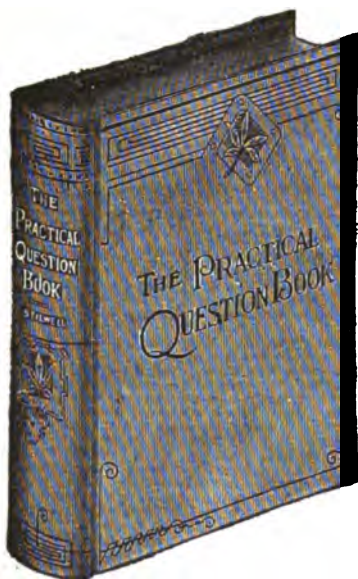
E. McCy, *Ripley, Ohio.*

Credit to W. E. L., Carmel, N. H.; W. O. B., Uxbridge, N. D.; J. L., Springfield, Mo.; B. J. F., Germantown, N. Y.

748. When and where was the first National Political Convention held? Give the name of the party and the circumstances connected with it.

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W. E. H., *Manchester, N. H.*

Another answer.—The anti-Masonic party held, at Philadelphia, in 1830, the first national political convention that ever assembled in the United States. According to its recommendation, the party met in convention at Baltimore, September 1831, and nominated William Wirt and Amos Ellmaker as their candidates for President and Vice-President of the U. S.

C. L. F., *East Peoria, Ill.*

754. Who wrote the ballad, "Old Grimes," and who was the subject of it?

The original Grimes was first immortalized by the English poet, Crabbe. Grimes was the subject of one of his tales in rhyme. Later the American poet, Albert G. Greene of Rhode Island, wrote the humorous ballad, "Old Grimes is Dead."

C. L. F., *East Peoria, Ill.*

755. Name three words in the English language that have three letters in alphabetical order in them. One with four.

Defer, ghibelline, afghan, cigar-stump. I do not know whether the last word is allowable, but it is the only one I can find, answering the question.

N.

Another.—*Deface, defalcate, defame, default, defeat, defect,*

defend, defer, etc. Webster gives one hundred and fifty words containing *def*.

C. L. F., *East Peoria, Ill.*

What about the one with *four*?—ED.

756. Were there two Missouri Compromises? If so, give them.

There was but one Missouri compromise. Later compromises brought forward by Clay had no connection with it. The Kansas-Nebraska bill brought forward by Stephen A. Douglas virtually repudiated it.

W. E. H., *Manchester, N. H.*

757. When the declaration of Independence was signed, was it signed by all of the signers on the 4th of July, 1776, or were there signers who signed after that time?

J. E. W.

The Declaration of Independence, after its passage on July 4th, 1776, was signed only by John Hancock as president and the secretary of Congress, but its engrossment was ordered. On August 2, following, fifty-four members met at Philadelphia and signed the engrossed copy, and subsequently two other delegates affixed their signatures.

X. Y.

Credit to H. A. P., Stormville, N. Y.

758. Which is the ascending node, the crossing of lines, so to speak, in the spring or fall?

B. C.

In the spring, when the north pole of the earth turns toward the sun, and the sun begins its apparent journey northward.

759. Where is the center of population of the United States, according to the census of '90?

About sixty miles southwest of Cincinnati.

H. A. P., *Stormville, N. Y.*

761. A horse goes one half as fast down hill as on the level, and three times as fast down hill as up-hill. It took $2\frac{1}{2}$ hours to go from A to B, and $2\frac{1}{2}$ to return from B to A by the same road, there being 2 miles more of up-hill going than returning, and the level road being one fifth of the whole distance. How far was it from A to B?

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By arithmetic.—In going, the horse climbed a two-mile hill, which, according to the terms of the problem, took as much time as to go three miles on the level, thus losing one mile. In returning, he descended the same hill in the same time as he could have gone one mile on the level, thus gaining one mile. Actual difference between the two trips, two miles on the level. Actual difference in time between two trips, $\frac{1}{2}$ hour. Hence the horse travels at the rate of 8 miles an hour on the level. It took him $2\frac{1}{2}$ hours to make the journey from A to B. $8 \times 2\frac{1}{2} = 20$ miles, distance from A to B, had the ground all been level. Now he loses one mile during the journey, which would make the equalized level distance 19 miles. Now only $\frac{1}{2}$ of the distance is level. $\frac{1}{2}$ of 19 = 9.5. $9.5 + 2 = 11.5$. $19 - 11.5 = 7.5$. Hence there were, in going from A to B, 1.9 miles level ground, 7.55 miles down hill, and 9.55 miles up hill. X. Y.

763. What office does the atmosphere of the earth perform? It supplies animals and plants with air, retains and modifies the solar heat, and carries moisture over the surface of the land, where it descends as rain or snow. Therefore without the atmosphere, the earth would be a barren and lifeless waste.

S. J. P., Lagrange, Va.

Another answer.—The atmosphere sustains life, deadens the attraction of gravitation so that a fall is less severe, enables objects on the earth to keep their position notwithstanding the rotation and revolution of the earth, changes the light of the sun into heat, makes combustion on the earth possible, etc. Its offices are many and varied.

764. Did the Liberty Bell proclaim liberty on the 4th of July? I've heard it was the 8th of July. W. T. M., Hamilton, Ala.

There was no ringing of the "Liberty Bell" on July 4th, 1776. It was on the 8th of July, in accordance with previous notice, that the citizens gathered at Independence Hall. The bell was rung and the declaration read. X. Y.

QUERIES.

797. Name the fluids of the body?
 798. Why is Pekin called the Celestial City?
 799. Diagram and analyze! "Gratians speaks an infinite deal of nothing, more than any man in all Venice."
 800. At what age do bones arrive at perfection? and describe the bones of the skull.
 801. How many inch boards can be sawed from a stick of timber 2 ft square, if the saw cut is $\frac{1}{4}$ of an inch.
 802. What three literary productions have had a marked influence on the history of this country.
 803. How can one best learn and distinguish between the sounds j and ch. Having trouble with these sounds I should like to know how to overcome this defect. A. SUBSCRIBER.
 804. Does Ice freeze on top or on the bottom.
 805. What is the "Civil Service Reform?"
 806. The sum of the three digits composing a number is 20. The digit in units' place is $\frac{1}{2}$ times that in hundreds' place. If 297 be added to the number, the order of the digits will be reversed. What is the number? Show how it can be solved arithmetically. J. M. W., Tulunga, Cal.
 807. Please parse for me the italicized words in following sentence taken from Quackenbos' Grammar: "We were attacked by pirates, and came near being drowned." Is the sentence good English? M. L. R.
 808. Who said that Howe hadn't taken Philadelphia as much as Philadelphia had taken Howe?
 809. In what war was Lincoln a captain and Davis a lieutenant?
 810. What colonel, when asked if he could take a battery, replied, "I'll try, sir"?
 811. A packing house charged $1\frac{1}{2}$ per cent. commission, and cleared \$2316.15 after paying out \$1208.75 for all expenses of packing; how many pounds of pork were packed, if it cost $4\frac{1}{2}$ cents a pound?
 812. A tank is 8x10 feet at the top, and 6x10 feet at the bottom, and ten feet deep. How high is the water when it is half full? S. A. W.
 813. Give the correct spelling of the proper adjective derived from Sigourney. R. E. M.

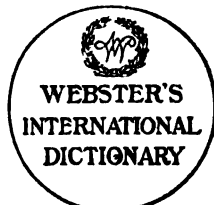
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First.

The flowers of spring-time
Bloom at my kiss;
The grass on the hill-side
Shows fresh loveliness.

Second.

I add to beauty, brightness,—
To richness, more of grace;
To dress I give completeness,
An ornament in place.

Whole.

I come so fair and fleeting,
To promise full completing,
That after night the sun shall rise,
And sunshine follow stormy skies.

C. W. H.

113. NUMERICAL ENIGMA.

I am composed of 57 letters.

1. My 53, 1, 17, 5, 4, 37, 53, 3, 16, 54, a noted people in Bible history.
2. My 53, 24, 9, 22, 6, 7, 27, 20, one of the sons of Jacob.
3. My 14, 43, 47, 56, 35, 51, 46, 44, 57, 53, 23, country between two rivers.
4. My 31, 16, 35, 26, 53, 15, 11, 9, 10, 4, 3, 42, a son of Jonathan.

5. My 30, 12, 43, 5, 47 was miraculously healed by Peter.
 6. My 37, 33, 21, 55, 44, the place where the miracle was wrought.
 7. My 36, 7, 53, 37, 53, 35, 36, 53, a city of Macedonia.
 8. My 14, 5, 6, 4, 55, 56, 12, 53, 23, an extensive district of Greece.
 9. My 57, 22, 6, 7, 31, 43, 37, 5, 42, an ancient burial place.
 10. My 30, 28, 42, 53, 39, 36, 53, 44, a country in Africa.
 11. My 47, 27, 35, 36, 42, 53, 41, 34, a wicked woman who came to an untimely end.
 12. My 57, 41, 23, 10, 7, 43, 29, one of the evangelists.
 13. My 15, 5, 25, 26, 24, 26, 43, 15, 27, the mother of a king of Judah.
 14. My 15, 44, 17, 26, 27, 2, 37, 18, 57, 16, 29, one of the twelve Apostles.
 15. My 15, 5, 45, 3, 53, 57, 4, 8, 54, a man miraculously healed by Christ.
 16. My 6, 33, 36, 17, 19, 54, an island visited by St. Paul.
 17. My 15, 43, 18, 37, 44, 42, the poetical name given to a beautiful land.
 18. My 6, 7, 22, 45, 53, 3, 23, a virtue greatly commended by Paul.
 19. My 1, 5, 57, 32, 20, 53, 12, one of the divisions of Palestine.
 20. My 9, 43, 12, 49, 44, 6, 7, 16, 20, 53, 15, a king of Assyria.
- My whole is a wise though brief prayer.

114. ANAGRAMS.

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- | | |
|---------------------------|------------------------|
| 1. Alged Trees lived. | 4. Wicked Love Affair. |
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| 3. Hope Torquone's Costa. | 6. E. H. Hettrina. |

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115. PROBLEM.

$$\begin{array}{r} \text{[Prove the following to be true.]} \\ (90-10) + (40-10) + (24-1) \\ \hline (19-1) + (4-1) \end{array} = 7 \quad \text{F. M. C.}$$

116. GEOGRAPHICAL ACROSTIC.

1. The "Forest City." 2. The "City of Spindles" 3. The "Railroad City." 4. The "City of Rocks." 5. A river meaning "swift water." 6. A lake meaning "village on a mountain." 7. The "City of Elms." 8. The "Athens of America." 9. The "Cradle of Liberty." 10. The "Hawkeye State." 11. City meaning "Cold spring." 12. The "Gate City." The initials read downward give the name of a prominent man. FRA.

117. SQUARE WORDS.

I. 1. Otherwise. 2. A weapon. 3. Kind of table. 4. A classical proper name. 5. The groups founded on the distinguishing peculiarity of plants.

II. 1. A cubical oratory within the temple at Mecca. 2. Red sandal wood of China. 3. A Portuguese physician. 4. The genus of a bird of prey found in Europe and America. 5. In reality. MACK.

ANSWERS TO FEBRUARY PUZZLES.

105. S(tu)een-seen; s(v)e-fie; tw(alv)e-wet; s(ix)hun(d)re(d)-shan; s(ix)ty on(e)-stony.

106.	I.	II.
	S H E D	P L A N
	H I V E	L I C E
	E V E N	A C H E
	D E N T	N E E D

107. 1, Minneapolis; 2, Providence; 3, Indianapolis; 4, Philadelphia; 5, Harrisburg; 6, Milwaukee; 7, San Francisco; 8, Louisville; 9, Omaha; 10, Worcester.

108. Ada, Amy, Ruth, Bertha, Mabel, Alice, Myra, Ella, Bridget, Augusta.

109. The curfew tolls the knell of parting day.
The lowing herd winds slowly o'er the lea,
The ploughman homeward plods his weary way,
And leaves the world to darkness and to me.

110. Ireland, reland, eland, land, and, an.

111. Wander, feint, timid, nomad, oot: "Time and tide wait for no man."

Answers have been received from Grace E. Walton.

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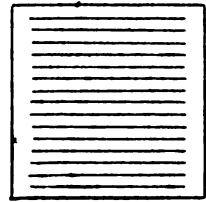
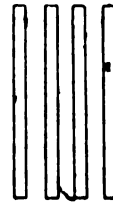
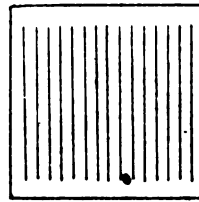
THE THIRD OCCUPATION.—*Net-work Drawing.*

THE FOURTH OCCUPATION.—*Coloring and Painting (in Water Colors).*

THE FIFTH OCCUPATION.—*Mat-plaiting (Weaving, Braiding).*

Strips of colored paper are, by means of a steel or wooden needle of peculiar construction, woven into an-

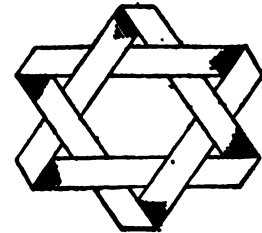
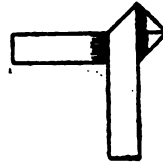
other (differently colored) leaf of paper, which is cut into strips throughout its entire surface, except that a margin



is left at each end to keep the strips in their places. A very great variety of designs are thus produced, and the inventive powers of teacher and pupil are constantly stimulated.

THE SIXTH OCCUPATION.—*Paper-interlacing (Inter-twining.)*

Paper strips of various colors, lengths, and widths, folded lengthwise, are used to represent a variety of geo-



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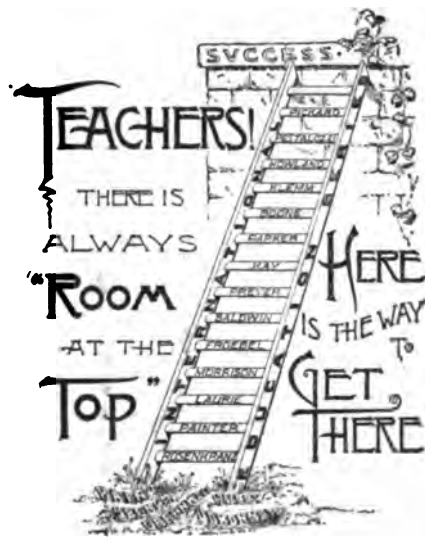
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THE AMERICAN TEACHER for January says, editorially: "It is not safe for anyone to talk or write of color who has not learned of the recent revelations." That is one reason why you should send a postage stamp, value two

cents, for our new pamphlet "Color in the Kindergarten." For two stamps we will add "A Manual of Primary Color Instruction," with suggestions for twenty color lessons. If you want to give the whole subject the attention it deserves, buy the book "Color in the School-Room," price by mail \$1.00. Our Complete Color Outfit, Wheel and Disks, costs \$10.00, express charges paid by the buyer. We will mail a sample box of Bradley's Educational Colored Papers for 60 cents, provided you mention The American Teacher.

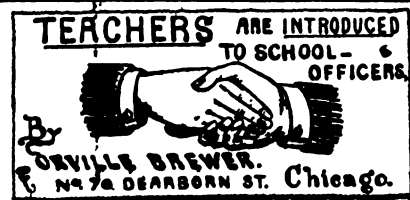
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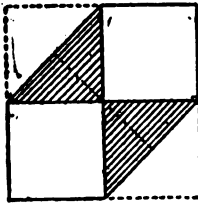
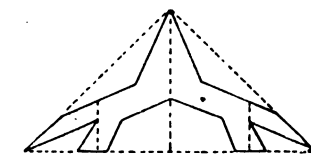
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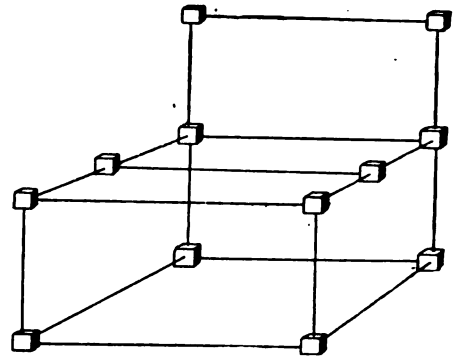
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God sees us every day;
But very near and just as dear,
Our mothers watch and pray.

HOW TO TEACH COLOR.

In teaching color to young children there is a great difference of opinion as to methods, just as there is a difference of opinion regarding all other branches of education at the present time. Indeed, color teaching as a systematic branch of primary education is in its infancy, consequently each educator with positive ideas on the subject ought to give a fair consideration to the opinion of all others who have experience in general education and interest enough in this branch to devote to it any considerable thought.

Hitherto all attempts to teach color in the primary grades have been almost wholly from the æsthetic side, while the science of color as briefly suggested in the school textbooks on physics has been separated from the artistic consideration of the subject.

A recent contribution to the matter of color teaching has been made by Milton Bradley Co., Springfield, Mass, in a manual entitled "Color in the School Room," in which the general laws of color and color combinations are so stated as to give the teacher hints regarding the directions in which she may expect to find good combinations so as to help her know the combinations for herself and lead the children to the same results. The last two chapters were written by a teacher who has had considerable experience in color instruction in the public schools. They are intended chiefly as hints to beginners in this line of work, as each teacher will, of course, adopt certain methods of her own, as they from time to time suggest themselves to her.

The simplest problems in color should be taught in every elementary school, and this can be readily done if the facts essential to a knowledge of color-education are known. Later the study of the more complex relations can be taken up by those who desire to become artists. Among the things that should be universally taught is the true theory of light and color, the proper combination of colors, and the best methods of illustrating the teaching in the classroom.

OBSERVATION LESSONS.

The young children in the Kindergarten should be taught by conversational lessons, how they move, why they eat, kinds of food, how to breathe properly, uses of the blood, value of pure air, care of their bodies, etc., developed from observation of themselves. They should be taught to observe and classify common animals, their modes of life and habits. They should have their attention directed to the seasons, sunrise and sunset, the phases of the moon, the evening star, the north star, the great dipper and to natural phenomena which they should be led to observe and about which they should inquire.



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THE kindergarten is no longer an experiment in this country; but since its first introduction, twenty-six years ago, has proven to be of great benefit to young children.

1. It gives to the child of the bread-winner two extra years of school life, not under a teacher, as the term is generally understood, but with a person who assumes the place of a wise mother for a few hours per day.

2. The child of parents in comfortable circumstances enjoys the gratification of his social instincts, learning thoughtfulness for others under the gentle control of an educated person, of special qualifications,—substitute, a few hours each day, for a mere nurse.

Even the most conscientious mother does not know how to satisfy the active child's cry, "*What can I do?*" unless she has studied the kindergarten philosophy, and the younger children do not claim her attention. In the kindergarten this God-given desire for occupation and love of industry is gratified and encouraged.

3. The intellectual training given in the kindergarten with toy materials meets the child's wants, adds to his happiness, and prepares him for school, which, entered

*A petition presented by the citizens of the District of Columbia to the Congress of the United States.

upon without this preparation, frequently proves a severe shock to his nervous system.

4. The physical training which the child receives in the kindergarten, by means of musical plays, gives him increased health and strength, as well as grace of motion, and stores up in his memory sunny recollections to cheer him in the battles and storms of life.

5. A child who has enjoyed one or two years of kindergarten training is apt not only to recognize his own position in life as related to others, but having learned to observe and admire the gifts of his Heavenly Father, he goes through life with eyes that see, ears that hear with understanding, and with a heart strengthened in its affections and grateful for the love of others.

No one will doubt the assertion that, during the earliest years of a child's life, the most lasting impressions are made, and that by early training depraved tendencies may be modified and corrected.

The public kindergarten will be an inestimable boon to the poor, neglected children we meet in our alleys and by-ways, who, for want of care, make up that part of our population for whom we are taxed to maintain prisons, almshouses, and reform schools; the saving even of one child from a life of crime affects the welfare and security of the whole community. Dr. Elisha Ferris makes this statement: "No less than twelve hundred debased persons have been traced to the lineage of six children who

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were born of one depraved woman." In accordance as a child is led during the first years of his life, his natural tendencies may become either vices or virtues.

6. It will require about the same amount of money to give free kindergartens to eight hundred little children as it would to improve from six to eight squares or blocks of a street. Whatever is done for the child, to educate his hand, heart, and head, is done not only for the present, but for future generations. Testimonials can be brought from many parents and public school teachers, who have proved for their children and pupils the moral and æsthetic influence of kindergarten training.

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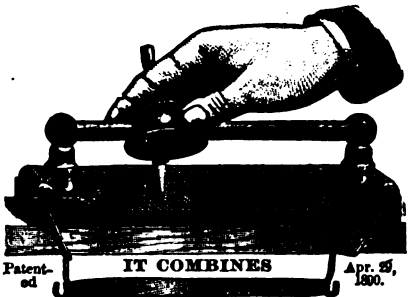
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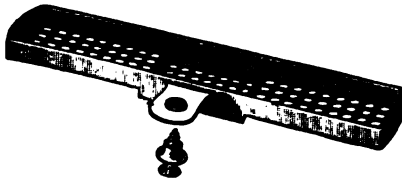
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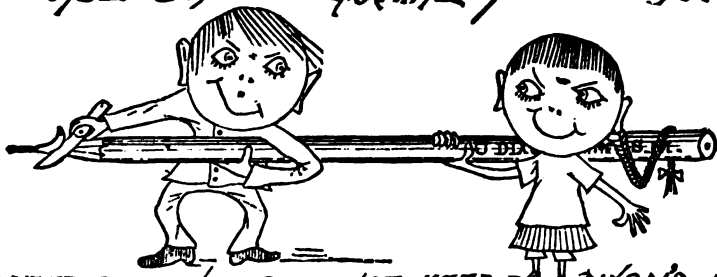
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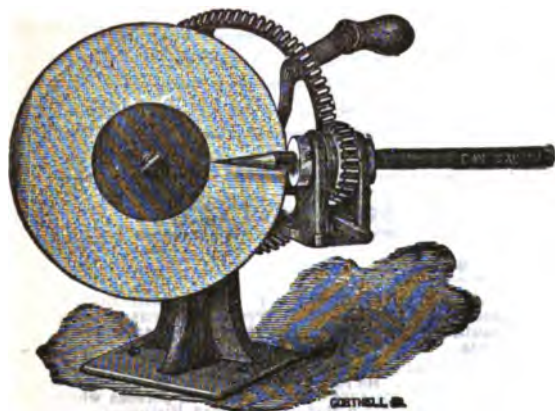
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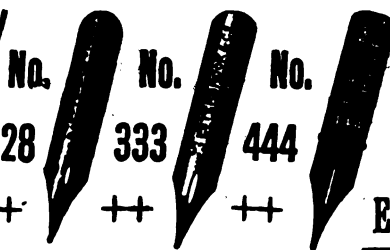
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VOL. XIV.

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No. 8.

SPRING'S PROCESSIONAL.

BY MARY E. M. RICHARDSON.

BRAVO, little Crocus!
When you hear the sound
Of Spring's feathered chorons,
From the mold you bound,
And unfurl your pennant, while the merry robins sing,
"Hail! hail to Spring!"

Round your standard quickly,
Their salute to make,
Buttercups rise thickly,
Prompt and wide awake.
Lavish of their yellow gold, their blossoms gay they bring.
"Hail! hail to Spring!"

Lilies of the Valley
And Anemone
All their forces rally;
Cowslips deck the lea;
Jouquil and Narcissus, too, their blossoms are gathering.
"Hail! hail to Spring!"

Violets sedately
Join the cavalcade;
Hyacinths look stately,
Regally arrayed;
Tulips light their torches, and the dainty blue-bells ring,
"Hail! hail to Spring!"

Here and there a cluster,
Dandelions gleam;
Fleurs de lis will muster
By the rippling stream;
Incense o'er the pageant Trailing Arbutus will fling.
"Hail! hail to Spring!"

CHILDREN'S EASTER.

BREAKS the joyful Easter dawn,
Clearer yet and stronger;
Winter from the world has gone;
Death shall be no longer.

Far away good angels drive
Night and sin and sadness;
Earth awakes in smiles, alive
With her dear Lord's gladness.

Open, happy buds of spring,
For the sun has risen!
Through the sky sweet voices ring,
Calling you from prison.

Little children dear, look up!
Towards his brightness pressing;
Lift up every heart, a cup
For the dear Lord's blessing.

—Lucy Larcom.

MISS ANDREWS' SOLUTION OF THE PROBLEM.

BY IDA M. GARDNER.

IT was the noon recess. The girls were grouped about in the playroom, eating their lunches. The teachers, in their daily gathering place, were discussing theirs along with the morning's news. A knock at the door, and a request that had become very frequent of late,—
"Please may Jennie and I go to Jameson's to get something for lunch?"

"You may," was the pleasant answer; but as Miss Andrews returned to her seat she remarked, "My girls are forcing me to make a rule. I cannot allow them to go so often to Jameson's unless I know that their parents approve. I fear the mothers do not know how often the girls go."

When the recess was over, and the girls were again gathered in the study hall, Miss Andrews, with a pleasant voice that was free from any taint of annoyance or displeasure, explained to the girls her attitude in regard to the matter. They were good girls, and the greatest harmony existed between teachers and pupils.

"Personally I have not the slightest objection to your going to Jameson's now and then, when your mothers think it best. But I wish them to know how often you go, and that hereafter you should bring me their written permission. Do not misunderstand me. I am willing you should go occasionally, but you have asked so often that I must make this rule. Hereafter I shall excuse no one to go to Jameson's who does not bring me the written excuse from her parents."

The girls smiled with a perfect understanding of Miss Andrews' position, and an equally apparent conviction that the required excuses would be readily granted. On the following morning Hattie Allison, one of the new girls, approached Miss Andrews with a cheery "good morning" and a winning smile.

"Miss Andrews, mamma wrote an excuse for me to go to Jameson's to-day with some of the other girls who were to bring excuses, and I came away in such a hurry that I forgot the excuse and left it lying on the table."

"That was too bad," said Miss Andrews, with hearty sympathy, as Hattie stopped to take breath.

"The other girls have brought their excuses, and,—I know what you said yesterday, but couldn't I go to-day

and bring the excuse to morrow?" and the bright young face was so pretty in its pleading that Miss Andrews' kind heart was tempted to yield.

She was too true a friend to her girls, however, to let her actions toward them be governed by impulse; but the impulse did make her voice very kind and sympathetic as she asked gently, "What is the rule, Hattie?"

"I know, Miss Andrews, but mamma wrote the excuse, only I forgot it."

"And if you forgot your own interest, is that any reason why I should break my word?"

"No-o!" was the reluctant admission.

"Not at all! And, Hattie, though I am truly sorry to refuse you, I think, after all, deep down in your heart, you will find by and by a real satisfaction that I did not let you go. You would a great deal rather know that Miss Andrews' word can be depended upon when she promises you something as well as when she denies you some request. I know you will be proud to feel that the laws of your school are well kept and respected. For myself, I love to feel the majesty of law as law, and I love it even when it triumphs at my cost."

The sparkling eye bore witness to the truth of the words, and the sweet smile took away the sting of disappointment from Hattie Allison's heart as she went to her seat, conscious for the first time in her life that law had something to do with her young, happy experience.

When the noon recess came again, and the girls were gathered in the playroom, — for they had not availed themselves of their own permission to go to Jameson's since Hattie could not go, — suddenly there came into their midst a hand with a dainty napkin full of lunch, and a kindly voice that said, "Hattie, I couldn't break my word, but I am only too happy to share my lunch with you."

"Oh, Miss Andrews, how kind! but, indeed, I do not need it. I brought some lunch to have in case the other girls could not go. Thank you, though, very much."

"You are sure you do not need it? I have enough without, and if I had not I would rather go hungry than break my word, and let you feel that I might fail you some day when you depended on my truth."

It was all done and said so quickly that the girls had hardly recovered their breath before Miss Andrews had vanished.

Hattie Allison, before she went home that night, came to the desk to thank Miss Andrews again for her "great kindness," and the teacher saw, with a thrill of gladness, how much better for Hattie had been "the law first and grace afterward."

As for the other girls they said nothing, but the room was strangely quiet with a conscious hush when Miss Andrews read for the next morning's lesson, without a word of comment, "I will keep thee as the apple of mine eye;" "Keep my law as the apple of thine eye." And that was the way Miss Andrews taught "morals."

BOYS' GAMES.

BY R. PAYSON.

WE have high New England authority for the statement, that whoever would win distinction in sedentary pursuits needs extraordinary toughness of body as well as extraordinary mental gifts. There have, indeed, been men of feeble bodily powers, yet whose towering intellects have raised them far above their fellows. But who shall tell on what heights they might have walked, had bodily vigor been equal to the demands of their mental force? We need strong bodies for our boys because we need them in our men. We do right to encourage athletic sports to a certain extent among our boys. We need to be careful not to frown upon outdoor excursions, walking expeditions, hunting trips, and the like, unless they grow to be an overwhelming bugbear.

When Hercules wrestled with Antæus, he found that the giant gained new strength every time he touched his mother, earth. We, too, can gain new strength by contact with mother-earth, — by fishing in her streams, roaming over her hills, floating on her lakes, breathing her fresh, invigorating air. Let boys, or teacher, or perhaps both together, do this, and they return to the school-room with new vigor. These are not set games, to be sure, but the same principle runs through both classes of amusements. Vigorous physical exercise, out of doors, whether a set game or athletics in a less regular and fixed form, is highly profitable to school boys to give them a new energy for the present and a good physique for the future. These are subjects appropriate for the teacher's attention, because it makes a great difference to him whether his boys have good health or not; and besides this he needs the same invigorating influence himself. There is no sacrifice of valuable time in taking the boys on long walks over the hills and through the fields; and it is not necessary to "point a moral or adorn a tale" by every object along the road. To be eternally moralizing makes one a bore, and that kills influence among boys.

But the playground develops and displays character. We can there find much that we fail to discover in the schoolroom. Your reserved boy never appears to good advantage before the instructor. Your shrewd boy conceals what he really is from policy. Your average boy is very apt to be one thing in the classroom and quite another species of being outside of it. The hour of recreation tears off the mask. It is, then, worth while to watch the proceedings of the playground, as far as it can be done without imposing a feeling of restraint. Let the boys play games. The spirit a boy takes to his games is sure to be some test of the spirit he takes to his work.

Books cannot teach everything. A great deal of that which makes the world move has never found its way into books. The spelling-book and arithmetic are not all there is in life, even in school life. Etiquette books will not make our boys gentlemen. Daring and endurance are

good, manly qualities. Are the boys going to learn them by sitting at a desk or marching to a recitation? To be sure, a certain kind of endurance may be learned by sitting at some desks; but it approaches too near martyrdom. Algebras do not teach self-restraint. The Latin grammar does not contain within its declensions and syntax much to inspire ideas of honor or fairness. These are things which the boys have got to learn by contact with each other, very largely. All through life there is a "give and take" which men are expected to meet. We despise the man who shrinks from it. This, too, is something which can be learned from games better than from books.

Out of our school days two things stick firmly in our memory; one is, whether we liked the teacher or not;



JAMES FLETCHER BLACKINTON.

the other is, the achievements of the playground. Many a school boy cannot scan the easiest line of Virgil without stumbling, or forever confounds the dative with the accusative, or looks upon geometry as a great, overwhelming mystery. Yet you may see these same boys holding a respectable place in the regard of their fellows, and even wielding a sort of influence that surprises you if you are a mere book teacher. The secret of it may, perhaps, be found in their ability to out-jump or out-run the rest when it comes to business of that sort. Boys are not slow to perceive that there are various kinds of excellence in the world; and it is well for them to perceive this. The schoolmaster's standard is one, but it is only one. Suppose the boy is not particularly bright in what we call

the solid parts,—the staple of educators,—the games enable him still to keep up his self-respect; and certainly he must be a narrow teacher who would insist upon its being kept up in one way only, or not at all. It would be better if he could do well in his books too, no doubt; but let us be thankful if he can do well in his sports. He may be a better man for it.

ZACHARY'S FIRST YEAR AT SCHOOL.—(VII.)

SARAH L. ARNOLD.

THE days of the glad winter sped rapidly away. The children found the snow a friend in both their work and their play. Zachary learned to build snow forts and to defend them bravely; to bear without fear or complaint the hurts that befel him in the snowball campaigns, and to rejoice in the victories won by his stronger and abler mates. These lessons were not without their value, Mrs. Deane thought. She was glad to hear her boy's generous praise of Mike Driscoll's athletic feats. "He can make the handsomest snowballs, and throw them the farthest. And his side always wins in the battles. Miss Soule watches us when we have a snow fight in the yard, she likes it, she says. And we are very careful not to hurt the little ones,"—Zachary declared, with the responsibility of seven years upon his shoulders.

The mother knew what Miss Soule's watching meant. It was good that the children felt in it only sympathy, instead of regarding it as surveillance. And she had come to realize that the education Zachary was getting in the schoolyard was helping him toward manhood, even though it was wholly unconscious on his part. The thoughtful care of those weaker and younger than himself, the willingness to accord praise to others, the courage to face possible pain without shrinking, and the will to keep back his tears when the hurt did come,—these the playground had brought him. And the happy, hearty play out of doors was making a sturdy little fellow out of Zachary.

Mrs. Deane knew that Miss Soule felt that the recess and noon were periods when her watchful care should be strengthened, not relaxed. She did not stay indoors, to sharpen her pencils or write upon the board, while the children were at play. She knew that her thought and her presence were needed wherever the children were, perhaps even more in their play than in their work. She saw that their plays were kindly and wholesome,—that all the children shared in them,—that the courtesy and justice of the playground were not forgotten, nor the lessons of the schoolroom unused in the schoolyard. The mothers, had they been wise enough, might well have thanked the young teacher for her foresight and painstaking. Many a hurt, many a hindrance, many a blot did little Zachary thus escape.

Happy as the winter had been, the spring brought new

life and gladness into the schoolroom. The children listened eagerly for the first sounds of spring, and watched for every token of her coming. The frogs' first peeping down by Beetle Head, the first bluebird on the fence near Ebenezer's Hill, the robins that Zachary heard one morning in the orchard, the fresh green blades of grass, and the early snowdrops, all these made commotion in the little schoolroom. The new awakening was hardly less important to the children than was the famous discovery of the gold in California to their fathers. Miss Soule rejoiced with the children. Nothing but a heartfelt sympathy with these could have made them so free and so joyous with her. Children are not touched nor helped by an assumed enthusiasm. The interest must be true,—to be inspiring. The teacher's spirit was truly reverent and childlike; and so she led the children to reverence and truth.

There were seed boxes in every window in the schoolroom, where the children had planted seeds,—corn, squash, beans, peas, had been hidden away in soft brown earth, and the little people guarded them carefully, restraining the impatient fingers that would pull up the hidden seeds that the eager eyes might see if they were growing. Miss Soule satisfied their curiosity, however, by providing water gardens, where the seeds rested upon a piece of coarse lace,—on the surface of the water,—so that the delicate, white roots found their way down, and the soft green leaves uplifted themselves before the very eyes of the children. The wide windows made room, too, for jars of water in which Miss Soule placed twigs which the children brought to her,—red maple buds, the brown varnished buds of the horse chestnut, too; lilac twigs, alder twigs, and "pussy willows," whose brown woods were still tied tight. All these twigs and seeds were offerings of the children themselves. "They care so much more for something which has cost them a little effort," Miss Soule explained to Mrs. Deane, who had watched the proceedings with interest. "Besides, if I should do all the work for them, I should rob them of the chief good in the lessons. My doing, my seeing, my saying, can never givethem the live knowledge and feeling that their own efforts will bring." And so Miss Soule submitted to, or rather delighted in having her table heaped with varied and abundant offerings from the fields and woods, which the zealous children brought with all the enthusiasm of new discoverers. Twigs of all the trees within reach,—cones, seeds, evergreens, and bits of moss, besides the pioneer dandelions and the earliest anemones. And though the teacher may often have been embarrassed by her riches, she made no sign. There was always some new lesson to learn, of which the twig or seed brought message. Mike Driscoll's pine bough with the cones was made the subject of the morning's talk, and of the language lesson later. The lad's knowledge of pine trees caused him to be so respected during the lesson that he worked with new dignity all day, and

earned a gilt star that week. Zachary's anemones took to themselves a week of morning lessons. For were there not the dainty pink and white blossoms, the curious seeds, the delicately cut leaves, and the slender stems, to be noticed, admired, and learned like the features of a friend? And then came the dandelions,—and the "truly mayflowers",—and the violets,—friends indeed! and enough for every child to call his own. What wonder there was joy in the schoolroom?

"It puzzles me, Miss Soule," observed a teacher who had come to visit the school, "to know how you can get time for the essentials, when you spend so much time on the purely ornamental."

Miss Soule's answer came slowly, perhaps because her visitor's remark indicated that no explanation could modify her preconceived notion as to the uselessness of such teaching. "I do not know how to answer you," she replied, "without saying first that I consider such work among the essentials, and the farthest from being 'purely ornamental.'"

"I do not see how that can be," pursued the critic,—
"The children merely learn a few pretty facts about flowers and seeds. Many of them cannot stay in school beyond the primary grades. They need to get all the reading and arithmetic they can, to help them to get their bread and butter."

"You mistake," returned Miss Soule, "if you infer that the children get nothing but pretty facts from these lessons. Those are the least of their gains. They learn to observe, so that their eyes are opened to beauty and truth in the world about them. They become reverent and thoughtful, watching the marvelous growth from seed to fruit. They learn to talk, having something worth the telling to tell. They learn to read, for their very reading lessons are made from the talks in which they are so vitally interested. Tell me, too,—if a boy must leave school without completing the primary work,—which is better, to go out into the world about him open-eyed, reverent, with capacity to enjoy the common blessings,—so freely bestowed, in leaf and blossom,—or to read one additional Third Reader, and to learn a few more combinations or processes in number,—leaving the other undone. 'The life is more than meat.' " The visitor did not reply, nor did she understand. But Mrs. Deane was very grateful for the unexpected sweetness poured into Zachary's school life. He brought to her his treasures from woods and fields, and found a ready ear to listen to the recital of his discoveries.

"But the very best of all," he said, very earnestly,—
"the best of all is the pollywogs. They are in a glass jar. They came from the peat hole, I helped to get them. They were tiny little black fishes as first, and then they began to grow,—and legs came out behind, and then legs came out in front, and their tails shortened up,—and mother, what do you guess? They turned out to be little frogs! And Miss Soule said baby frogs were

tadpoles, and always grew in that way. But I saw them, and I know it is true now. And mamma, we learned this :

He prayeth best who loveth best
All things, both great and small,
For the dear God, who loveth us,
He made and loveth all."

Mrs. Deane kissed the earnest face upturned to hers,—and thought,—“The child is surely learning to read.”

TALKS WITH YOUNG TEACHERS.

BY W. L. JAQUITH.

THE DUTY OF SELF-CULTURE.

SOONER or later, the teacher finds himself confronted by a problem, which requires him to balance the supposed demands of his profession against his personal needs, and sacrifice one to the other. Night after night the faithful teacher comes from arduous schoolroom duties, long protracted, to an evening full to overflowing with the routine work of lessons, examinations, rank. He carries the burden bravely, but turns a regretful glance to early visions of what he one day hoped to make of himself, so different from the person he feels himself to be. Some touch of this feeling may be inevitable. Let us idealize our duties as we will, there is still a great deal of drudgery in the world, and always must be. And in looking forward to the profession we chose for ourselves, we perhaps omitted that homely but indispensable element entirely from our imaginings. Hence the disappointment with which we recognize the fact that no exalted mood, no passion of enthusiasm can quite do away with the fact that we have our share of the world's plain, commonplace work to do.

That is one view of the matter. Only a partial truth, however. The other half is, that our lives must not be all drudgery; that no pressure of circumstances rightly requires us to sacrifice our longings for a full, rich life, to the duties of the schoolroom.

If we question whether this delightful thought is really a safe guide, let us look into our own lives and experience for confirmation. Who were the teachers to whom we ourselves owe the largest debt of gratitude? Was not the thing for which we bless them to-day, the inspiring influence of a broad, cultured nature, that by an irresistible influence drew all hearts, and wakened aspirations that were the turning-point of a life-time?

Those who have lingered with delight over Mr. Woodbury's "Talks with Ralph Waldo Emerson" have perhaps felt as never before what a wonderful thing is this power of a rich, noble personality over the hearts of men. If we have kept a heart open to the sweet influences of life that meet us everywhere, in literature, art, society, nature, we need not fear that our work will be poorly done. The truly cultured mind sees the duties

of life in their true relations, and while it finds no necessary task too insignificant for faithful performance, yet wastes no time over frivolous details.

In plain words, then, we owe it to our pupils to save what time and strength we may, for fostering the finer, higher capabilities of our nature; only as we are symmetrical, well-rounded men and women, can we be thoroughly efficient teachers.

At first, while the duties are unfamiliar, the portion of time for self-improvement may be very small. Only wait patiently, and resolve that at the earliest opportunity better things shall come. If during the crowded experience of your first year, you can save no more than fifteen minutes each day for the favorite book, do that religiously, and your gain will be steady, though small.

It is a good rule for us all to carry on some special pursuit in which we are interested, the study of a language, definite reading along certain lines, nature-work in some favorite science;—something outside of our work, which we do for the love of it.

Of course the chief difficulty is in the limited time at our command. We must learn the art of selection. It has been wisely said that we should not do unthinkingly every task that beckons us. We should select those that call us imperatively, those that belong to us, and thus save time by eliminating the unnecessary and unprofitable from our day.

Thus obeying the finest instincts of the heart and mind, absorbing into our lives the wisdom and grace of others wiser than we, in time we may learn to live on high levels, where the deep realities of life are ever more to us,—the shallow, unessential elements ever less. We may learn to key ourselves persistently to these levels, by whatever petty circumstances or discouraging influences we are surrounded.

And while we ourselves may be all unconscious of great attainment, our vision ever bent on the ideal above us, rather than on self, so living, we may radiate that ennobling influence which is the greatest blessing one human being can bestow upon another.

CENSUS AREAS.—The census tells us just how large we are. Texas has 265,780 square miles. California follows with 158,360; Montana, 146,080; New Mexico, 125,580; Arizona, 113,020; Nevada, 110,700; Colorado, 103,925. More than one third of the entire area of the country, exclusive of Alaska, is included in these seven states and territories. In striking contrast with this is the fact that Rhode Island has but 1,250 square miles; Delaware, 2,050; Connecticut, 4,990; New Jersey, 7,815; Massachusetts, 8,315; New Hampshire, 9,305; Vermont, 9,565;—these seven having but one thousandth part of the area, exclusive of Alaska. Oklahoma is nearly five times as great as Massachusetts.

PRINCIPLES

A STUDY OF PSYCHOLOGY.

BY EVA D. KELLOGG.

IT was in vacation at a sanitarium. Several hundred patients from all parts of the country had gathered here for health and recuperation, and many had brought children. Twice a day the gymnasium of the establishment brought this medley of people together for physical exercises, and it was well worth a visit to see the variety of age, size, and personal peculiarity contrasted in this go-as-you-please exercise, where no accuracy or perfectness was expected, in a class made up of members here to-day and there to-morrow.

The first look struck me as a chance to study realistic, concrete psychology that in its "application to teaching" would out-Sully Sully. Old men and young men, old ladies and young ladies, the middle-aged of both sexes, and children of all ages and conditions of civilization, were standing together with Indian clubs trying to follow a leader and a piano. "Do the best you can, only get the exercise," was the sole general direction that put everybody at ease, and the absurdities of all gave each the courage to venture.

Relieved of all responsibility of any success in the matter, it was a rich treat for a teacher accustomed to shoulder with dread every failure before her to watch the efforts of this miscellaneous collection and see what would result if left completely to themselves. The business man, jerky and impatient, because he couldn't bring his muscles immediately under command; the shy little mother, far more used to tossing baby than moving arms to rhythm; the tiny bit of femininity, in decimated skirt and long, black stockings, serious as fate in aping her elders; the college president, striking both clubs and attitudes, determined to be dignified or die; the young lady of dancing habits, catching the rhythmic turns and time by instinct; the young athlete, who had "done this thing before, you know"; the semi-invalid school teacher, prim even in her summer blouse, trying to practise what she had always preached of perfection; the base-ball player, with his unconscious batting motion, — all these interested and amused, but were only the support to the great central star of the performance, — a boy about ten or twelve years of age, who with boyish modesty had placed himself in the most conspicuous spot in the room, and was glorying in the chance to do just as he liked. If any teacher thinks she knows what that would be, free from even the atmosphere of correction, she has reckoned without the sight, and has entirely under-estimated the strength of her re-

straining influence. Only one law regulated the boy's motions, and that was the law of opposites. When clubs should go up, his went down. If they should swing to the right, his swung to the left. The facing of the class to the east brought him serenely toward the setting sun. One club dropped, rolled, and was rescued by a motion of the handspring family in which the other club just missed a pair of black eyes that flashed toward him in vain. Standing on one foot, then the other, he wriggled, twisted, dodging the right way always with a skill born of what — total depravity? Not that, surely, for his face wore a look unconscious of any wrong. He was having "a good time" without the botheration of school influences about him. After exercising every muscle in his body as fancy dictated, he laid down both clubs with a report of two pistol shots, and left the class in the midst of the lesson, and in two minutes was swinging wildly in a hammock outside.

Day after day I watched that boy in these exercises with a precisely similar result, varied by bursts of conversation and expletives as he worked. I watched him at other times, and did not find him unlike other boys, but once put to anything like method and regularity, even if it were voluntary, as in this case, he was overflowing with serpentine perversity. His mother and sisters were refined ladies, and his home training evidently good.

I questioned in this way: Was I seeing in that boy, in these unique conditions, just what I would see in every boy if let alone? If it were undisciplined child nature, why didn't the little girls show it? If this inimitable twisting and wrong doing were indicative of a barbaric stage, which every normal, healthy boy is supposed to pass through, did this same barbarism extend to the moral, mental, and spiritual nature of the boy, or was it simply the freedom of animal life before the soul had waked? Had this anything to do with the reason why they remember the wrong and forget the right so easily; why falsehoods spring to the lips when truth would do better; why they kill insects and rob birds' nests, and find such affinity in mischief? It was all a psychological labyrinth; but one thing is certain, — that any teacher who can take half a hundred of these mysterious boys and bring them to the ordinary condition of law and conformity, as seen in every-day schoolrooms, and can find a way to make them *like* school, with their natural tendency to fly off at every point, is accomplishing a work that only ceases to be phenomenal because it is so common. Next time we become discouraged, teachers, at the lack of conformity, let us remember the boy of the clubs, and think what the pupils would do if left to themselves.

GERMANY's youthful Emperor Wilhelm will some time see that he made a mistake when he said that "journalists are high school products run to seed."

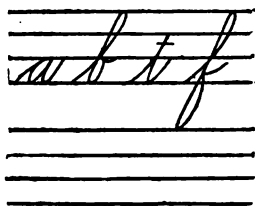
METHODS

PLAN [FOR TEACHING BEGINNERS TO WRITE.

* BY O. SATTERLEE, KALAMAZOO, MICH.

WHEN the children first enter school some of them have never seen chalk, much less handled it. Very few of them have learned to use a slate and pencil. The first exercise required of them is to pass to the black-board where the chalk is given. Show them how to make short, straight, slanting lines (at the slant for the straight lines used in the small letters), saying nothing about the slant, not even calling them lines, but simply asking them to try and make some marks just like those you have made. The novelty of having the chalk for their "truly own" usually affords sufficient entertainment for the first few minutes. Be careful to praise whenever an honest effort has been made, no matter how poor the result. After having tried to use the chalk on the board have the children take their seats and make the same kind of marks on their slates. This prepares the way for the slanting lines, one space in height, which is the subject-matter for the first writing lesson.

A little may well be said regarding ruling slates. I find the most convenient ruling for all work is an arrangement of lines in groups of four, an eighth of an inch apart, leaving a space of a quarter of an inch, then another group of four lines, an eighth of an inch apart, etc. Thus: This gives the spacing for the height of the letter and also leaves room for the lower loop letters, as *f*, *g*, etc. The ruling may be done by a broken-pointed steel pen, with a scratch-awl, or better yet, with a ruling frame such as Prof. E. T. Curtis of Calumet, Mich., has manufactured for this purpose.



One day's work is seldom enough on the first element (slanting line). At the next session give a few additional directions, as to-day try to make all your marks the same length; or, yesterday you made your marks too long, to-day try to make them shorter, etc.

At the second lesson talk with the children about lines and spaces, bringing out the idea of vertical, horizontal, slanting, and parallel lines, also spaces, and draw from these, or give the terms "lines" in place of "marks." Review the work of the previous day, requiring pupils to make their slanting lines only one space high. When they have learned to make the first element reasonably well, the teacher may place her right hand so that the

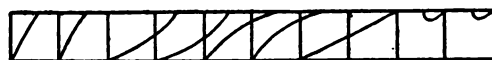
outer side of the little finger shall rest against the black-board and trace the position with the chalk (forming a right curved line). Compare this line with the straight, slanting line and lead the children to see and tell that one is straight and the other (bends) curves; also that the bent line was made by following the position of the right hand as held against the board, leading to and bringing out the idea and term "right curve."

Drill on making right curves on board and slates in a similar manner as on straight slanting lines. Perhaps the writing lessons for the entire week will be none too many in which to secure good work on these lines. Remember that with the little ones we cannot follow too closely the old saying "make haste slowly."

Now combine the slanting straight line and the right curve; place a dot above and the children will be delighted to discover that they have the letter *i*. After sufficient drill on making *i*, make the letter *u*. Teach the left curve by placing the left hand against the board, proceeding in a similar manner as for teaching the right curve. We now have all that is necessary for teaching *m*, *n*, and *x*, simply telling the children that the cross line in *x* is like the other slanting straight line, only it slants more.

Next teach *v* calling attention to the third and fourth lines in the letter, having the children notice that the third line in *v* does not slant as much as the third line in *i*. We may combine letters into words as, *in*, *an*, *ox*.

Next, compare slant of lines, which may be shown by the following diagram:



Call attention to the fourth line in *v*, or the horizontal, short curve, bringing out the idea that it begins and ends at the same height, and is only a half space long. Following *v* teach *w*. Have a familiar talk with the children about the modifications of the lines, by which obtain and lead them to use the terms "space," "half space," "space and a half slant," "right curves," "left curves," and "horizontal curves." Next teach that *o* is made of a left curve, a right curve, and a horizontal curve. Show that the left and right curves have the same slant as the straight lines *i*, *u*, etc. After *o* teach *a* and *c*, being careful to notice the difference in length of curve and short lines. Analyze each letter in a similar way.

I consider a good writing manual indispensable to the teacher, for use in the order of teaching the letters, and minute directions and illustrations regarding their formation. With a good manual thoroughly studied and a proper use of the knowledge thus gained, together with the hints given above, I see no reason why teaching beginners to write should not be a pleasant and easy part of school work.

The public schools cost the United States \$132,000,000. The pension expense is greater.

A SILK - WORM TALK.

BY MINNIE G. CLARK.

[It would be well for the teacher to obtain for this talk a card, on which is fastened a silk-worm in a tiny bottle of alcohol, a cocoon, waste[flow], and a spool of silk; these can be obtained at any silk exchange, separately or on the card.]

ONCE upon a time a little girl named Bessie was walking along the street of a great city, when she saw on a stand beside a door-way a glass case holding something so wonderful that she went nearer to get a better view, and what do you think it was? It looked like a dish of peanuts, not ordinary, every-day peanuts, but peanuts made of silk! Did you ever hear of anything so queer? There they were right before her eyes,—some a pale yellow, others so yellow they were almost red, and some,—the loveliest of all,—were pure white. Bessie wondered if they sold them by the quart, and how much five cents would buy,—that was all the money she had,—and she decided to go in and find out. But the lady of whom she inquired only laughed, and said they did not sell them by the quart, but by the pound, and she called them cocoons, and advised Bessie to visit the country where they were raised if she wanted to know more about them.



Bessie thought it all very strange, and she coaxed her mother to take her to that wonderful place; so they went one lovely day in June to the silk country. When they reached the place, all Bessie could see was a rough wooden building, with a great many trees about it. Bessie looked hard at the trees to see if there were any signs of silk cocoons, but her mother explained that they did not grow on trees, but were made by worms, who ate the leaves of these mulberry trees. Now Bessie did not care very much for worms; she had been taught to always treat them politely, but she did not think they were interesting or useful, so she was surprised that it was a worm who made the silk for her dainty ribbons and her mamma's party dresses that she admired so much. She was very much disappointed, and half afraid to go into the house where her mother said the silk-worms lived, but soon forgot everything in looking at the wonders around her. On a table in the room they entered were a great many squares of cardboard, with tiny dark specks on them very close together; these they were told were the eggs from which silk-worms were to come, and even as Bessie looked one of the specks moved and out crawled the tiniest worm she had ever seen, no larger

than the head of a very small pin; soon others came from the eggs. Then the man placed a piece of mosquito netting over them, on which he sprinkled tender leaves; the worms seemed to smell the food, for they crawled up through the holes and began to eat at once; the man then took up the netting with the worms still upon it, and Bessie followed him into another room.

Here she almost gasped for breath; there were worms, worms everywhere! She had never seen so many in her life,—little brown worms, middle-sized gray worms, and great white worms,—all on leaf-covered trays that arose tier above tier on all sides of the room, and they were eating with all their might, making a strange, rustling noise like the patter of rain on the leaves. As Bessie walked around she found some trays where the worms were not eating, but were lying very quiet with their heads in the air. She asked if they were sleeping, but was told that the silk-worm was too busy making its silk and storing it away in its body ever to sleep, but that eating so much made it outgrow its coat every little while, and it was obliged to stop eating long enough for it to drop off. Underneath was always a nice, ready-made suit, larger than the old, so that the worm could eat more than ever, which it always did to make up lost time. It does this three or four times in its short life, never leaving the tender leaves for five weeks when it has grown to be a great gray worm.

Then the man took Bessie to a tray of the largest worms that did not act at all like the other worms; they were crawling this way and that way, waving their heads in the air very wildly; some were crawling up branches at the side, others had reached quiet corners, and had already begun to send out a silky thread, fastening it to the twigs around. Then each began to spin its cocoon, working its head round and round; a few had a thin covering all about them, and Bessie could just see them through their silken curtain still at work, their heads and even their bodies turning round and round. One had finished spinning, and all Bessie could see was the lovely silk cocoon hanging from a twig by a cluster of spidery silk ropes; the worm was inside,—a prisoner in a room of its own building. They told Bessie that while it was inside it was changing into a moth, and in a short time, if it was not prevented, it would work itself out of its prison, breaking and spoiling the silk; so they usually put the worms to sleep before they were ready to come out,—then some day they would wind off the silk, six miles of it in one cocoon. But then it takes a great many twisted together to make a thread strong enough to sew with. They showed Bessie some spools of silk that had been dyed bright colors, and a beautiful red, white, and blue silk flag that had been woven from their own silk. She bought some cocoons and skeins of silk before she left, and promised the busy little workers that she would be especially kind to their cousins, the caterpillars, whenever she met them.

LESSONS IN ZOOLOGY.*

BY CLARABEL GILMAN, JAMAICA PLAIN, MASS.

The Lobster.—(I.)

A single lobster is killed for our lesson by keeping it in warm water for a few hours. Many pupils will hardly recognize it in its natural dark-green coat, while others will not only know it, but will also describe the curious lobster-pots in which it is taken on our sea coast. In the interior of the country, where crayfishes abound, the lobster is not needed, though it is an excellent plan for the teacher to have one while the pupils have crayfishes. The proper position for our specimen is with the back uppermost and the head pointing away from us. As the lobster is held up in this position before the class, some observations will be quickly made:

Its color is dark green, and reddish on the claws. Its body is shaped like a tube. It is covered with a hard crust. The crust is its skeleton. The body has two parts, the head and the tail. The tail is made of rings. The head is covered with a great shell like a saddle.

The part that has been called the lobster's head includes his chest as well, and we put on the blackboard the proper names of the parts mentioned, in this way:

The two parts of the lobster's body are the head-thorax (Fig. 1, *oth*) and the abdomen (Fig. 1, *ab*). The large shield that covers the head-thorax is the carapace.

But these two parts are not the whole lobster. What else has he?

He has legs, claws, feelers, and eyes. He has little

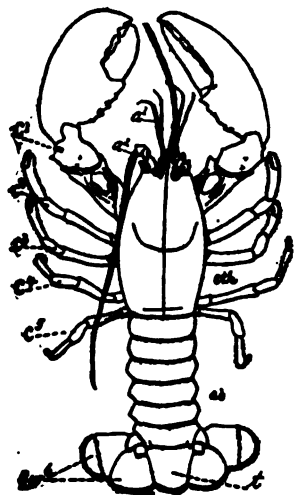


FIG. 1.

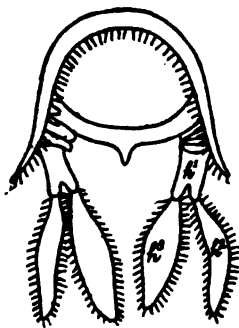


FIG. 2.

flaps on the rings of the abdomen. He has a sharp nose between his eyes.

We find that the "sharp nose" is only the pointed end of the carapace, and is called the beak. We wonder what it is there for. To protect the eyes, of course. But the legs and feelers, which are attached to the body by joints, are all called appendages. These appendages are not all in one piece like the bristles of the earthworm, but are themselves jointed. For the first time we begin to study animals with *jointed appendages*.

We see that the abdomen consists of six rings and a flattened piece at the end called the telson (Fig. 1, *t*).

* Copyright.

It is not to be wondered at if the tail fin puzzles the class, with the two broad lobes on each side of the telson, while in the crayfish the telson itself is jointed. But after careful observation they will see that the telson is a part of the body, while the lobes on either side (Fig. 1, *sw*) are parts of organs that are jointed to the body, that is, parts of appendages. If this is clearly seen, the next question will be correctly answered.

How many appendages can we find on any ring of the abdomen?

There are two on each one. There is a pair of appendages on each of the six rings, but none on the telson.

Are these appendages all alike?

The front pair are very small and the hind pair very large, but the others are nearly the same size.

These appendages are all used in swimming when the lobster is young, so are called swimmerets or little swimmers. In the breeding season the female carries her eggs glued to the small swimmerets.

Those who have seen a live lobster try to get away in a hurry, know why the sixth pair of swimmerets are so large. Their broad lobes spread out on each side of the telson in such a way as to make a powerful tail fin with which the lobster strikes the water, thus sending himself forcibly backward.

We examine the third pair of swimmerets, and find that they consist of a stem (Fig. 2, *h*) bearing two flattened lobes (Fig. 2, *h* and *h*).

Some of the class will doubtless observe that the second, third, fourth, and fifth pairs of swimmerets are all made on the same plan, but it is not wise to force any such comparison upon grammar school pupils. When they are older it will be a part of their work to trace one common plan in all its variations through the whole series of appendages, but each study of homologies is for maturer pupils than ours.

Fig. 2.—Third segment of the abdomen with its pair of appendages.

MODELING IN PAPIER-MACHÉ.—(II.)

BY ALBERT MALTEY, PH.D.,
Normal School, Slippery Rock, Pa.

THE following map will take water-color as kindly as the best Whatman paper, and so the coast may be delicately tinted with blue. To do this, touch the edges lightly with the full brush of indigo or Prussian blue.

A full lesson period may well be spent in tracing the courses of the rivers. Do this at first in pencil,—mistakes can be erased,—and then go over the lines with blue ink of water-color. The rivers should be traced from source to mouth. The main tributaries of the Amazon should be shown upon the map. In a complete map the wonderful little river, the Cassiquiare, which connects the Rio Negro of the Amazonian system with the Orinoco, will be traced in position. La Plata and its tributaries draining the Pampas of the south, should also be shown.

In the central portion of the plateau section of the Andes, a little depression may be painted blue to represent Lake Titicaca, the highest large lake in the world.

(Fig. 1.) The Desert of Atacama may be shown by a dash of color, such as sepia or sienna.



Fig. 1.

The groups of volcanoes may be distinguished by gluing small pieces of goldfoil upon the tips of the elevations molded to represent them. Thus may be represented the volcano Tolima, and the linear groups of the plateau of Quito containing Chimborazo and Pichincha, Cayambe, and the famous Cotapaxi, the highest active volcano in the world. The volcanoes of the central group, Arequipa and Sahama, and the remarkable Chilean range, including Antuco and Corcovado, should also be shown upon the complete map.

The map should be removed from the board, and glued to a sheet of heavy pasteboard. A thin caseknife passed under the map will readily enable one to raise it from the board. Large maps may be fastened to the mounting card by brass paper-clasps. Strips of wood tacked to the upper and lower edges of the chart will give completeness to the map.

Use the modeling as a means, not as an end. Teachers will be surprised to find that the children will make maps far more beautiful than anything they could draw in the given time, if they are allowed to make use of this simple medium in molding. Pupils in my own classes have improved upon my instructions, and have modeled maps in which light gray pulp made from newspapers represented the lowlands, while the pure white pulp was used for the mountains and plateaus.

A single trial will convince any one of the value of the material.

VARIETY WORK (Primary).

BY LAURA F. ARMITAGE.

1. I am going to a grocery store. Name five things I can buy there.
2. Name some fruits that are ripe in June.
3. Name three things that can be bought at a dry goods store.
4. What flowers can be seen by the roadside in September?
5. To what kind of a store would you go to buy salt? Beefsteak? flour? gloves? a watch? medicine?
6. Name two things that your clothes are made of.

7. Name three kinds of fruit that grow in a warm country.
8. Where do golden robins build their nests?
9. Name three things that are dug from the ground.
10. What person uses an awl at his work? a plane? an anvil?
11. Name something sold by the gallon; peck; pound; barrel.
12. At what season are the brooks highest?
13. What do birds find to eat when the ground is covered with snow?
14. Dresses are made of cotton, wool, and silk. Tell where each of these comes from.

"BUGS AND THINGS;"

OR,

Fred and Ethel at the Brookside.*

Caddis Worms

ETHEL sat reading *Water Babies*, and was just at the place where naughty Tom is pulling open the pretty little caddis shell.



"What does this mean?" she said, taking the book to Fred, who had just returned home. "I never saw

caddis worms. What are they?"

"If you had come in April, I could have shown you plenty of them. They make their cases of grains of sand and wee stones. I have taken off the stones and pulled the worms out, and they would go right to work and make another case. Some of them use just sand, and you find them hanging on grasses. They stay in the case about two weeks, then they break them open, and the caddis-fly comes out."

"Why, Fred!" cried Ethel, "if you broke the caddis case open, you were as bad as Tom," and the poor child looked distressed.

"I think Tom was just mischievous, and I wanted to study the little creature," replied Fred, hardly knowing how to comfort the tender-hearted child.

"Well, Fred, you are the best boy I know, and I'm proud to have you for my cousin. I've been so happy here this summer. Somehow I can't go back feeling as I did. I want to learn, now, and watch things for myself. I love bugs and little things, now, and I suppose you and Uncle Walter like them better than anything else."

"What's that?" said Uncle Walter, who had just come in. "This is what I like best:

'So we will wander, sing, and learn together,
And heed our Mother Nature's loving call;
But you, oh darling little lad and maiden,
To me, you are the sweetest things of all.'"

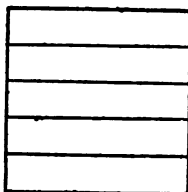
* The writer is greatly indebted to *Up and Down the Brooks*, published by Houghton, Mifflin, & Co.

BUSY WORK IN READING,

BY FRANK M. OLIVER.

LET the teacher get some white cardboard and cut it into squares, allowing about thirty to each pupil. For each thirty inch squares, cut one of two-and-a-half inches.

With a ruling square, thus: It the squares in cut them into



On one side of draw a simple out-trative of some the large square line picture illus-word which the class has had. On the other side write a score of sentences suggested by the picture. On the inch squares



write the same stories, putting one word on each square. When this is done, put the large square and the small squares into an envelope. Give each child one envelope. He will build the sentences with one-inch squares, copying from the large square. After finishing them he will

*I am a little boy.
My name is Ned.
I have a new ax.
Have you an ax?
I can cut with it.
Do you see my ax?*

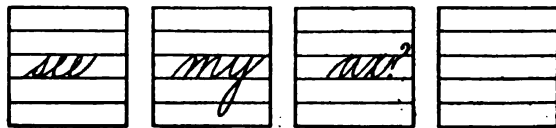
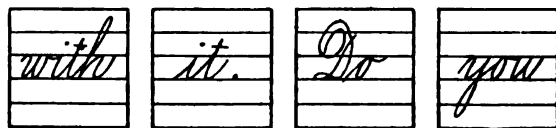
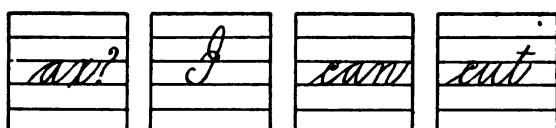
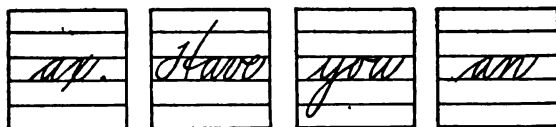
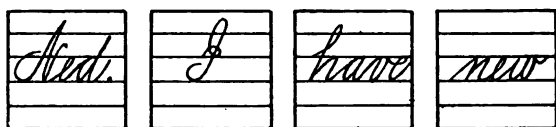
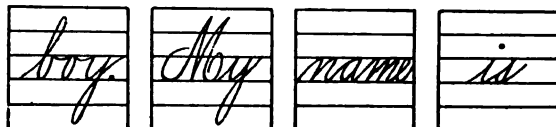
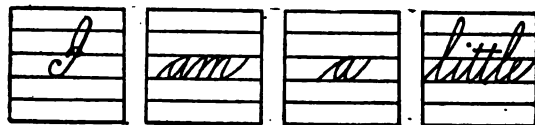
write them on his slate or on spaced paper, and read them to his teacher when she looks at the slates.

If no two sets of pictures and stories are alike, each

child may be given a different envelope each day, and in this way he will go over the whole range of words that he has been taught.

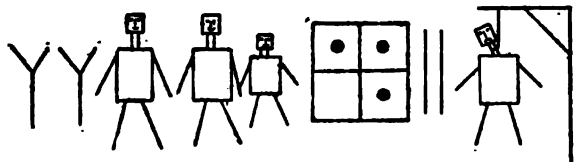
The teacher can add one or two new envelopes to the "set" each week, embracing the new words for the week. In this way the work will be kept fresh.

An idea of the work in one envelope is given below:



GUESS IT.

DR. Z. X. SNYDER, principal of the Indiana (Pa.) Normal School, gives the following ingenious illustration of the use that may be made of illustration by a man who has skill with the hand and abundant native wit, but no knowledge of the art of reading or writing:



Guess it, you who have never seen it. It tells the whole story. Can you?



THE CHILDREN AND THE POETS.

ARRANGED BY KATE L. BROWN.

HENRY W. LONGFELLOW.



Henry W. Longfellow

Daybreak.

A WIND came up out of the sea,
And said, "O mists, make room for me."

It hailed the ships and cried, "Sail on,
Ye mariners, the night is gone."

And hurried landward far away,
Crying, "Awake! it is the day."

It said unto the forest, "Shout!
Hang all your leafy banners out."

It touched the wood-bird's folded wing.
And said, "O bird, awake and sing."

And o'er the farms, "O chanticleer,
Your clarion blow, the day is near."

It whispered to the fields of corn,
"Bow down, and hail the coming morn."

It shouted through the belfry-tower,
Awake, O bell! proclaim the hour.

It crossed the churchyard with a sigh,
And said, "Not yet! in silence lie."

For the Children.

Look into this face, dear children, and see one who loved you well,—better, perhaps, than any other poet; and it is the face of one who was well-loved, too, both by the children and their elders. It is our own Longfellow,—the scholar, teacher, poet, and lover of men, but first and always, the noble, upright, Christian gentleman.

Feb. 27, 1807, in a certain old-fashioned house at Portland, Me., a little boy was born. There were several children in the Longfellow household, so the little Henry had no chance to lead a dreamy and lonely life. He was a vivacious, happy-hearted child, yet rather delicate in body and very pure and sensitive in mind. He liked a good game where there was real sport, but hated all roughness and bullying. It is said that he suffered so much in a certain school by seeing the cruelty of the older boys toward the younger, that his parents were obliged to remove him.

Henry began early to compose verses. While very young he wrote a funny poem on a turnip, and at thirteen his first long poem, "The Battle of Lovell's Pond." He entered Bowdoin College a year later, and during his life there published three prose papers and twenty-four poems. He spent several years in Europe preparing to be a teacher in this same college. Some years later, he went to Harvard College to be professor of modern languages. He kept this place until 1854, but lived in Cambridge all the rest of his life, and there most of his poems were written. He lived in the old Craigie mansion, once General Washington's headquarters.

Mr. Longfellow was the friend of the slave, and he wrote some of his noblest poems against the wrong of slavery, at times when most people dared not speak for the poor black man. He was a warm lover and admirer of children, and their presence in his study when he was at work did not seem to disturb him. A funny story is told of a dear little boy who used to visit him a great deal, and who was especially interested in his books. One day the child inquired if he had "Jack, the Giant Killer."

"No," said Mr. Longfellow sadly, "I can't afford to buy it."

The little fellow came to him later in the day with two cents he had taken from his bank, that this beloved friend might no longer be deprived of the bliss of owning "Jack, the Giant Killer."

The children of Cambridge, on one of his later birthdays, sent him a beautiful arm chair. It was made from the wood of the chestnut tree that he mentions in his "Village Blacksmith," and finely carved. This pleased him much, and he wrote one of his most charming poems to thank them.

No one of our standard poets has written so much that children can understand and love as Longfellow. You cannot learn too much of him or too much about him. These are some of his poems best suited to little people

"The Wreck of the Hesperus," "The Village Blacksmith," "The Old Clock on the Stairs," "The Fiftieth Birthday of Agassiz," "Children," "Sandalphon," "Paul Revere's Ride," "King Robert of Sicily," "The Birds of Killingworth," "The Children's Hour," "Snow Flakes," "Christmas Bells," and parts of "Hiawatha," "Evangeline," and "The Building of the Ship." He died March 24, 1882.

For the Teacher.

It is difficult to select from such a wealth of material any one poem that shall be considered typical. "Day-break" has been chosen, not as the best child's poem Longfellow has written, but because of its perfect word-picturing, and the fine sweep of its rhythm. In the repetition of poetry in concert, children are apt to be parrot-like, to say words with the lips, and not to be penetrated and enthused by the real meaning and spirit.

"Daylight" is all spirit. There is no redundancy of words; the body of the poem is just sufficient to give form to the spirit, so that the *thought* compels attention rather than the words. This is a poem that does not need a minute development. Still, it is well to call attention to the imagery in each separate verse. Call their attention to the different ways in which the wind greeted different things. "It hailed the ships," "touched the wood-bird," "whispered to the corn," "shouted through the belfry." Why the difference? The last verse is best left untouched. It explains itself.

HELPS BY THE WAY.

BY ANNA A. GROLL.

WE all agree that one of the greatest obstacles in introducing manual training into a class is the lack of material in numbers sufficient to furnish each child with a specimen or object, and thus to obtain the best result in the shortest time. Very often this want would cease to exist, and models be obtained if we looked for them in the right places, as articles near at hand, which often seem useless, can be converted into the much desired models. For example: Given fifty-six spools, a sharp penknife, a piece of sandpaper and a little time, and as a result we find ourselves the happy possessors of fifty-six wooden cylinders. How? Cut off (vertically) the projecting roll or ridge at each end of the spool, which being of soft wood requires little effort, and rub lightly with sandpaper and a finished cylinder is the result. As spools vary in size, so your collection may be of large as well as small cylinders, when finished.

Another difficulty arises in getting patterns in number and variety to transfer to the sewing cards. Transfer or impression paper in red, blue or black can be obtained at any art store for less than a dime a sheet, and will be found invaluable. Having cut the brown papers, on

which you wish the pattern marked of the required size, cut the transfer sheet into pieces of like size.

Take the pattern which is to be repeated, and place under it a square of transfer paper, then below that a square of brown paper, and so on, for five or six layers. Hold the pattern firmly and trace round it with a sharp pencil. Remove the transfer papers and the pattern is already drawn on each brown paper. The transfer papers may be used many, many times. Thus in a very short time patterns may be prepared for the entire class, and they may be as varied as the fancy dictates. The children can aid in preparing these papers and they do it with the utmost care and accuracy.

DIVISION OF FRACTIONS.

BY BELLE THOMAS,
State Normal School, Peru, Neb.

IN the February issue of the *AMERICAN TEACHER* is a short article on "Division of Fractions." If we follow the directions of "M. J. N.," we are led directly to the old rule for division of fractions, a rule which troubles many young teachers, and some old ones.

Do not all the difficulties with this subject arise from a wrong notion of what is meant by division when dealing with whole numbers? If we remember that division is only a measuring of one quantity by another, and that both must be of the same denomination, will it not help to solve the difficulty when handling fractions? To divide one hundred and twenty-five dollars by five dollars is simply measuring the larger number by the smaller, and determining how many \$5 there are in the \$125.

While learning to add and subtract fractions, the pupils found that they must always be of the same denomination before they could be added or subtracted. Why not teach the same in regard to division? By following such a plan, the child soon learns to think of the division of fractions as a subject to be easily illustrated and understood, while if he is simply taught to manipulate the figures according to the rule given in most of our arithmetics, he is always in doubt as to the reason. He may be led to discover that to divide a fraction by a whole number is impossible; he will see that when the books call for $\frac{3}{4} \div 6$, it means that $\frac{1}{4}$ of $\frac{3}{4}$ is required; or if told to divide $\frac{3}{4}$ by $\frac{1}{4}$, he is virtually told to find how many $\frac{1}{4}$'s there are in $\frac{3}{4}$.

Through the aid of paper folding and drawings, division of fractions may be as intelligently taught and learned as the first steps which the child takes in his first introduction to number.

THERE is quite a considerable interest displayed lately in the matter of the national colors floating over our public schools, and it is well that it is so, for assuredly they have an unconscious influence on the youth of our land, in favor of patriotism and the love of all American institutions. Recognizing this fact, G. W. Simmons & Co., of Oak Hall, Boston, are advertising in the columns of this paper to sell United States Government Bunting Flags at the lowest prices, and they notify interested people to send for their catalogue.



For the present Mr. Winship will conduct this Department. He will be pleased to receive questions upon school discipline, administration, methods of teaching, and will answer the same personally or secure answers from experts. Teachers will please write their names and addresses, not for publication, but that answers may be given by letter, if not of general interest. Will teachers ask questions with the pen as freely as with the voice?

78. *What can I do with a child who stutters? He has never been to school before.* BELINGTON, West Va.

He should have special treatment by an expert teacher of the art, "How not to Stutter." But it is not probable that the parents will think it worth their while to go to the expense of sending the child to some large city for treatment. You can probably cure him if you have sufficient tact and patience. The principle involved is to have him use freely, easily, promptly, sounds and syllables on which he does not stutter. For instance: It is frequently the soft sounds of the vowels that he cannot use. He cannot say "kittie" without saying, "k-k-k-kittie," but if you ask him to say "kē-tie," he can do it with ease, and after a time will say "kittie" without difficulty. Do not flatter yourself that you can cure him by distracting his attention from himself, but give him practice upon letters, syllables, words, and sentences, until he can do some things perfectly, and then enlarge his vocabulary of non-stuttering words.

79. *A theft was committed in my room,—a pocket-book containing twelve cents was taken from one of the desks. I searched the pockets of the children, but could find no trace of it. I then reported to the principal, who ordered the person of every child in the room to be searched again. Taking off the shoes and searching the person and books of each child, we failed to find the money. While the search was going on, something dropped and rolled on the floor, which we found to be six cents of the money. From the direction it came and from the fact of their being the next in order to be searched when the money dropped, I feel sure that I know two boys (seat-mates) to be guilty, but have no means of proving it. The remaining six cents were found on the grounds, where they seemed to have been hidden. Is there anything further that can be done? Are we justified in thus searching the children?* T. E. R.

The teacher is not a police officer, neither is she a court of justice. I think she has no legal right to search a child. Even if she has, it is of very doubtful policy. No harm comes from it with children under eight or nine years old, but even then it is a questionable action. The court does not allow the person of any man or woman to be searched unless there is suspicion that he has something that does not belong to him. In a school of fifty there is but one who has the stolen article. It is a terrible thing to put the forty-nine innocent ones through a search as though they were criminals. If I was to make

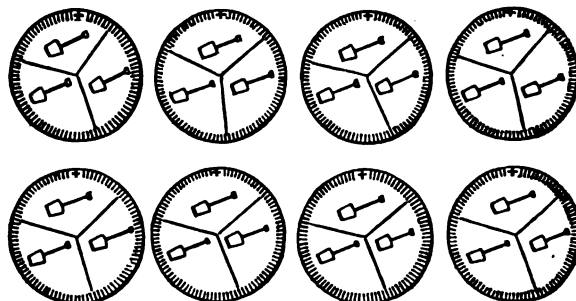
a search, I would ask who was willing to be searched, and then there is no disgrace attaching to it, as they virtually ask it as a vindication. Keep it ever in mind that you are not employed to detect criminals. If the guilty one is never found, it gives an excuse for frequent talks, wise talks, upon theft and upon the guilt of the undiscovered wrong-doer.

80. *Will you please give a talk on the division of one fraction by another.* J. W.

I do not know what is desired. Probably you refer to a case like this,— $\frac{1}{2} \div \frac{1}{3}$. The root of all the difficulty in the division of fractions is in the failure to appreciate the fact that when you divide by anything less than one you increase the dividend. All the mistakes in the division of fractions result from not making it perfectly clear that if a number is divided by $\frac{1}{2}$ or $\frac{1}{3}$ the dividend is two or three times as great in consequence. The best illustration of this that I have seen was worked out by a child seven years old. The teacher gave as an example this: $8 \div \frac{1}{3}$. The child was required to make a problem of his own and work out the solution and illustrate it. He did it in this way:

"If one shovel costs one third of a dollar, how many shovels can I get for eight dollars?"

In order to see how many he would get, he drew eight dollars and divided each dollar by one third, so that the eight dollars divided by one third made 24 thirds of dollars to invest in 24 shovels. That child will never forget that when he divides by $\frac{1}{3}$ the answer will be three times as great as the dividend.



When the principle is well understood, it is perfectly easy to take the next step, for to divide by 2 (thirds) is the same as dividing 24 apples by 2 apples. In every case, until the work is perfectly understood, consider the divisor in two parts and divide first by the fractional unit and then by the number of units: $8 \div \frac{1}{3}$. $8 \div \frac{1}{3} = 24$; by $\frac{1}{3} = \frac{1}{3}$ of 24, or 12. In the case of a fractional dividend it is the same: $\frac{2}{3} \div \frac{1}{3}$. $\frac{2}{3} \div \frac{1}{3} = 2$; by $\frac{1}{3} = \frac{1}{3}$ of $\frac{2}{3}$ or $\frac{2}{9}$. Never use the rule, Invert the divisor and proceed as in multiplication.

81. *How can I teach my pupils to say they are sorry? They will act it out in many ways and tell others they are sorry, but don't want teacher to know it.* E. A. B.

I would not try to make a child say he is sorry. I would pay a premium upon showing he is sorry, and I

would say I was pleased to see that he was sorry by the better way in which he conducts himself; then he will say it naturally and promptly.

82. *I recently heard the term "empirical thinking." Can you tell me what it means?* LANCASTER.

It distinguishes thinking that is not reasoning. It is reproductive thinking only, while reasoning is productive thinking. It is good for nothing in an emergency, while reasoning is then at its best. The idea in empirical thinking is that the thoughts come as the result of a train of experiences each of which suggests another eventuating in this. It is experience and not logic that leads to it.

83. *Would you insist upon the pupils saying "Mr." if the pastor of one of the leading churches publicly objected to its use?* S. R. C.

Certainly not. Have no issue with any public man on so slight a matter.

84. *How can pupils best be taught to recognize numbers by sight?* A. W. T.

It is not important that the average child should recognize large numbers at sight. He will easily recognize 2 and 3. These are about all that he needs to recognize. Four will be recognized as 2 and 2; 5, as 3 and 2, or 2, 2, and 1. It is a better habit to analyze a number and recognize it in parts than as a whole. For illustration: Here are four small objects of any kind, . . . or . . . or The eye that is trained to group them in twos will get more and better discipline than the one that tries to see them as a whole. This is more clearly seen with . . . or . . . or

85. *How can I teach correct emphasis?*

A GRAMMAR SCHOOL TEACHER.

Most teachers do far too much of this. The idea is not primarily to give emphasis, but to give the thought clearly and distinctly. In this there is a certain flavor that is more important than emphasis. If the pupil has a clear idea of what he wishes to express, he will have little trouble in giving a good emphasis and inflection. Bring out each thought by a question, and have the entire sentence read in response. There is rarely a single emphasis that is important. To illustrate:

"A thin mist curling upward reveals the white tents of Israel gleaming in the soft light of early dawn."

Question.—What does the mist curling upward do?"

Read.—"A thin mist curling upward reveals the white tents of Israel," etc.

Q.—What is revealed?

Read.—"A thin mist curling upward reveals the white tents of Israel," etc.

Q.—What kind of tents are revealed?

Read.—"A thin mist curling upward reveals the white tents of Israel gleaming," etc.

Q.—What reveals the tents?

Read.—"A thin mist curling upward reveals the white tents of Israel," etc.

Q.—What kind of a mist was it?

Read.—"A thin mist curling upward reveals the white tents of Israel," etc.

Q.—What was the mist doing?

Read.—"A thin mist curling upward reveals," etc.

In the same way it may be read to emphasize "gleaming," "light," "soft," "dawn," "early."

The entire sentence should always be read in response to a question regarding the meaning. The pupils will do more than emphasize a word; they will give a special, individual flavor to the sentence.

86. *How can I break up reading in "sing-song"?*

A TEACHER AT HER WITS' END.

By having each sentence read in answer to a question, Sentence-at-a-time reading is rarely sing-song.

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THE AMERICAN TEACHER.

A. E. WINSHIP, } Editors.
W. E. SHELDON, }

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THE manual training idea captures every man who takes a hand in it.

NEW YORK is the third largest German city in the world, with half a million German citizens.

THE flag is to have four rows of seven stars and two rows of eight stars to provide for the five new states after July 4.

IN the New York City schools 60 per cent. of the women and 80 per cent. of the men are graduates from the chief colleges of the country.

PENNSYLVANIA is educationally alive this year, judging from the reports of the legislature. Good, bad, and indifferent measures are proposed.

FIVE HUNDRED Kansas teachers have petitioned the legislature to forbid by law the issuing of certificates to any one who uses profanity, intoxicating liquors, or tobacco.

WEIGH carefully the value of the education the child receives at your hand. Be not content with a mere perfunctory round of duties, but be sure that whatever the child learns has a definite, permanent value.

IS THIS TRUE?—It is reported that the school directors of the town of Cherokee, Ia., require every woman teacher to sign a contract that she will not marry during the school year. It is said they find teachers enough even with this iron-clad agreement. These men will be famous.

THERE will have to be some evidence other than that which the public now has before it will accept the fact that in Germany, from 1883 to 1888, there were 289 school children who committed suicide, and one fifth of them from fear of punishment. The kind of children get punished are not those who dread it very much.

PRIVATE SCHOOLS take much pains to popularize their teachers through the papers and conversation. This is admirable. Why should not school boards make some effort to popularize public school teachers? It would require little effort if some one would feel the responsibility. The teachers can easily aid each other.

SUPERINTENDENT FINGER of North Carolina has been in the habit of writing heroic reports, but his last is his best. He says:

"As everywhere, we have in North Carolina people who either want no public schools, or if any, only a sort of charity schools for the poor. For such people we have already too much tax for public schools. We have also many people, and the number is rapidly increasing, who believe in liberal education for all the people for the people's benefit and for the safety of the state. To such people, many of whom are entirely dependent upon the public schools for the education of their children, the schools are unsatisfactory because of the amount of money applied, and the consequent shortness of annual terms and want of proper qualities on the part of many teachers. It is simply idle to expect satisfactory schools with our average annual terms of sixty days, and with an expenditure of money amounting to 44 cents on each of the federal population (each man, woman, and child), and only \$1.22 on each of the school population, from 6 to 21 years of age.

BOOK-A-MONTH COURSE.

Memory: What It Is, and How to Improve It. By David Kay. International Education Series. New York: D. Appleton & Co. Price, by mail, \$1.50.

There are three reasons why this book is selected. First, because one of the most essential features in school work is the training of the memory. It is true that much has been said by way of ridiculing the memory phase of school teaching; but this applies merely to rare instances in which senseless teachers allow words to be memorized without ideas. That does not cultivate the memory in the best way, and is of very little service. Second, teachers themselves need to give special attention to the memory both for their professional and personal profit as well as pleasure. Third, because it is one of the fads of the day. Teachers have a curiosity to know about the various phases and principles of memory, and this is one of the books on the subject that can be recommended without reservation.

SUGGESTIONS.

1. The Editor's Preface is the most valuable twelve pages of the book, and should be read and re-read.
2. The Author's Preface is the best ten pages he has ever written, and should be read with great care.
3. The first chapter, "Memory: What It Is," may be read lightly after the first few pages, although it is highly interesting and every-way valuable as a consensus of opinion.
4. The chapter on "Matter and Mind" is also a con-

sensus of critical opinion. Personally, I do not accept the material basis of the memory, and should regret being the innocent cause of making disciples to this faith; but in this age there is very little to hope for from one who lacks the courage to read that which he does not accept, and still less from one who has not the intellectual independence to read good things based on false theories without being harmed thereby.

5. The chapter on "The Body," one of the longest in the book, is also largely introductory to the treatment of memory, but for various reasons it is indispensable to an understanding of the author's views in later chapters.

6. The chapter on "The Senses" must be read with care, because the best phase of the memory is, perhaps, the sense-memory, or the retention of what is learned through the senses.

7. The chapter on "Mental Images" is well put; that on "The Mind, Conscious and Unconscious," presents largely the opinions of various writers.

8. The last three chapters are very strong, and to these the attention should be largely directed.

QUESTIONS.

1. State briefly the chief thought on the first page of the Editor's Preface.

2. What is the antidote for the baneful effect of mechanical memory? Page 2, Editor's Preface.

3. Is it worth while to strengthen the weak places in the memory? Page 3, Editor's Preface.

4. What is the effect of the discipline of attention? Page 4, Editor's Preface.

5. Have you ever known anything to correspond to Dr. Harris' experience on page XI., Preface?

6. Does memory training pay? Author's Preface, pages XVIII. and XIX.

7. Is the thought entirely new to you in the sentence commencing "It is well known," page XXI.?

8. Upon what does the memory of a thing depend? Page 251.

9. What is attention? Give a full answer.

10. What is the most important thought on pages 258 and 259?

11. On page 261?

12. State in brief the leading thought on page 269.

13. What are the two leading principles or laws on which associations are formed? Page 273.

14. What is the great principle to be observed in associations by contiguity? Page 277.

15. Give, briefly, the thought in the last paragraph on page 278.

16. The last on page 279.

17. The last on page 281.

18. The last on page 286.

19. Do you appreciate the method given on page 292?

20. Do you appreciate the importance of the thought in the last paragraph on page 305?

EDITORIAL MENTION.

There is an organized labor movement in Belgium.

The re-valuation of Maine shows a handsome increase. The Pine Tree state is prospering.

The school board of Lewiston, after paying its yearly bills, has quite a sum in the treasury.

The plan proposed by certain Americans to send the Russian Jews to Palestine will probably fail for various reasons.

Clergymen and college professors are not to be treated as contract laborers hereafter. Thanks to the 61st Congress.

Merritt L. Fernald, age sixteen, is the youngest professor Harvard has ever had. He is a son of President Fernald of the Maine State College, and is assistant botanist of Harvard University.

The French government has passed a bill forbidding the employment of children under 12; for more than ten hours between 12 and 16. Women and children must rest from work one day each week.

The German government has passed a bill absolutely prohibiting the employment of children under 13. From 13 to 16 they can work but ten hours; women can work but eleven hours. Neither women nor children can work on Sunday.

Saturday, March 7, a reception was tendered to Dr. Edward Everett Hale of Boston and Mr. Alex. E. Frye of Hyde Park, Mass., by the citizens of Pasadena, Cal. The gathering included nearly one hundred of the leading educators of the Pacific slope.

MAKING AND DRAWING AS A MEANS OF EXPRESSION.

In the paper read by Miss Foster, at the Boston Art Conference, recently, the various ways in which thought may be expressed by making and drawing were brought before the notice of the large body of teachers in attendance. Making a form in clay, in paper, or other material was shown to be a more concrete means of expression than that dependent on language alone, and therefore more easily mastered by the little child. Thus the child, from his study of the typical or natural form, is enabled to reproduce it in clay or paper, with more or less truth, long before he can describe it accurately in words, or draw its appearance on paper. The order of the work should be sequential, that is it should proceed from the simplest or most concrete to the more abstract. The order given was modeling, tablet laying, stick laying, paper folding and drawing,—in each instance the work was to be done directly from the model itself. All making should have a definite purpose and when one subject is mastered another should succeed it until the hand becomes the obedient servant of the body, and executes with skill and nicety the concept of the mind which is the result of personal thought and observation on the part of the children. Much thought should be given to the choice of articles selected as models in this work, their use and beauty of form should be carefully considered, for by this means the child's aesthetic sense may be appealed to and he may acquire not only a keen observation and critical eye, but a feeling for beauty of form and color. In this latter connection nature proves indispensable, and the child learns to express the truth and beauty that he is led to feel through his study of natural forms. The paper left us with the conclusion that "making" might become most truly a part of art education, developing through its channel the aesthetic and higher faculties of the children. The illustrative exercise that followed was conducted by Mrs. Asbrand, the class drawing a pattern of a paper box, which was afterward cut out and pasted. In the discussion that followed the paper and the lesson, the use of the type forms in preference to natural forms was brought up. It was thought that the type forms being the simplest possible, would be more quickly comprehended by the child, but that it would be well to associate these at the earliest possible moment with corresponding forms in nature, that the child might be made alive to the truth and beauty of the natural world.

THE HOUSE WE LIVE IN.

BY MARY L. SAWYER, BOXFORD, MASS.

Our Common Rocks.

"Birds are fleeing, bees are humming,
April's here, and summer's coming!"

NOBODY can stay in the house through the April days, and as you hunt for rock saxifrage and the earliest columbine, you will have a fine chance to study the ledges which these flowers love so well. Now is the time to begin a cabinet of your own by collecting specimens of all the rocks in your neighborhood.

Here is granite? No; it looks like it; here are the glassy grains of quartz, and feldspar in abundance, but this black mineral is not mica, for it is not elastic, nor does it come off in scales. If we could get a perfect crystal, it would look like this (Fig. 1), but in our specimens



FIG. 1.

it is probably in grains, or in flat-sided pieces. It is tough; its luster is glassy; it can be scratched, giving a bluish-green streak. Its name is hornblende. (Who can tell why its color is black?) This rock, then, is made up of quartz, feldspar, and *hornblende*, instead of quartz, feldspar, and *mica*, and it is called syenite. The Quincy granite is syenite, and so is the so-called Scotch granite. Both granite and syenite vary greatly in color, as the feldspar, the chief ingredient, may be white or gray or pink. The mica, too, may be white, muscovite, or black, biolite. Some mineralogists do not use the terms granite and syenite, but distinguish these rocks as micaceous granite and hornblende granite.

Very probably, however, the ledges most familiar to you are neither syenite nor granite, but *gneiss*, a rock that forms half of New England, it is said. Gneiss is composed of the same minerals, but it is stratified; that is, it looks as if arranged in layers. Sometimes this stratification, or banded arrangement, is seen very plainly, and sometimes it is very faint. Of course when this is the case, it is hard to tell just when a rock ceases to be granite and becomes gneiss, as stratification is the only difference between them.

Gneiss, like granite, may be micaceous or hornblende. The more abundant the mica, the plainer the schistose structure (schistose meaning easily divided), till finally, as granite shaded into gneiss, so gneiss passes into mica



FIG. 2.

schist, another abundant New England rock. We will talk of mica schist again when we study the contents of the rocks, but to-day we need only notice that while at first sight it seems made wholly of mica, and may be divided into very thin layers, it really contains feldspar and quartz.

As micaceous gneiss shades into mica schist, hornblende gneiss may pass into hornblende rock, dark, compact, very heavy, containing no feldspar, and composed



FIG. 3.

almost wholly of hornblende, and also into diorite, which is mainly feldspar and hornblende. Diorite shows the banded structure very beautifully, and affords some of the most interesting specimens for cabinets, as a small piece will exhibit several distinct layers.

With some of you, sandstone will be the most familiar rock. Sandstone (Fig. 2.) is largely composed of quartz, as it is made of consolidated sand, and sand, as we have seen, is principally quartz grains. "Free-stone," so largely used for building, is a compact, fine-grained sandstone, and the common grindstone that country boys know all about is sandstone too.

Conglomerates (Fig. 3) are made of consolidated gravel, just as sandstone is consolidated sand and slate

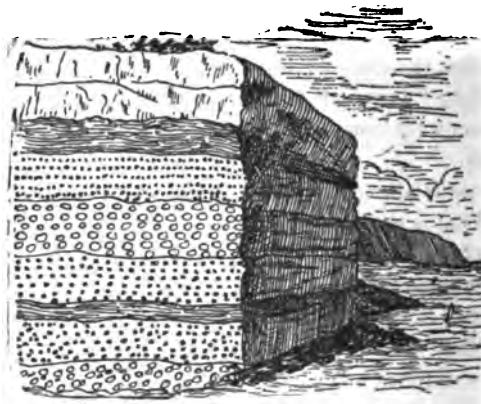


FIG. 4.

consolidated clay. All these are true sedimentary rocks, and if you visit a quarry you will see the layers very plainly, something like this (Fig. 4). Some conglomerates are very beautiful, containing pebbles of bright colors, red green and white, while in others the "pebbles" are stones a foot in diameter. If they are rounded, the conglomerate is called a pudding stone; if sharp and angular, a breccia. If you want to know why pudding-

stone is so abundant in Roxbury, read Dr. Holmes' poem. Besides these common rocks, there are others formed wholly of one mineral; as quartzite, of quartz, differing from sandstone in being crystalline; felsite, which we have spoken of before, made of feldspar; and limestone, which may be compact and fine, or coarse and crystalline. A collection of limestone alone would afford endless varieties of form and color, for marbles, which are crystalline limestones, are found in every shade. You will remember that you need only the magic drop of acid to detect limestone in any form. Associated with it you may find a green rock, rather greasy to the touch, which is serpentine.

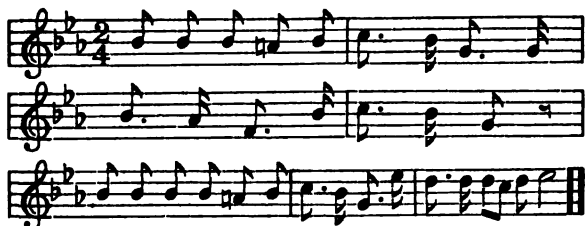
In your search for specimens, examine carefully not only the ledge rocks, but the boulders, or loose stones, for some of these are strangers and travelers, and can tell you many a story that you cannot learn from the ledges.

SONGS AND SONG GAMES.

BY M. E. C.

A LITTLE exercise which the children enjoy is one introducing the perfect abandon of hopping and skipping. Each row in turn is allowed to go about the room several times to the jingle given below. The arms are to hang at the sides and take as the movement goes on the same free swing that is noticeable when children hop and skip along the pavement.

A HOP AND A SKIP.



A hop and a skip, and away we go,
Lo! Lo! Lo! Lo!
A hop and a skip, and away we go,
Lo! Lo! Lo!

MARCHING SONG.



Let us haste away and with faces bright,
Gaily, gaily march away,—march! march!
Then march away, march away,

Happy, light, and free;
March away, march away singing merrily,
Left, right, left and right, march along,
With a merry, merry song.

The above song is capital for quickening and brightening up the small people after a time of busy or hard work at the seats. The next exercise is used in the same way, as in "A Hop and a Skip."

MERRY GAME.



Merrily we'll march along, march along, march along;
Merrily we'll march along, march, march along.
Merrily we'll fly away, fly away, fly away,
Merrily we'll fly away, fly, fly away.

Various forms of exercise may be introduced by changing "fly away" to "run," "skip," "hop," "creep," "move," etc.

After a school has learned to clap, tap, etc., to march and waltz music, it forms a nice exercise to go through the movements without singing. This sort of play quickens the ear, so that the change in rhythm will, after very little practice, be quickly noticed. It also varies the monotony of the daily routine to introduce between the lesson periods simply the movements of any of the school's motion songs. The little folks will show a great deal of delight, and the small lips will be seen to be noiselessly repeating the words, that no motion shall be lost.

The Weather Song given is adaptable to the caprices of our climate. When it snows the first verse may be used, and in rainy weather the second.

WEATHER SONG.



"See the snow comes softly falling,
Softly falling down,
So it comes all pure and white,
Tiny snowflakes soft and light.
See the snow comes softly falling,
Softly, to the ground,
So softly to the ground.

"Hark! the rain comes patter, patter,
On the window-pane,
So it falleth from the sky,
Kissing the earth so brown and dry.
Hark! the rain comes patter, patter,
On the window-pane,
Upon the window-pane."

Knots and Tangles.

Original puzzles, answers, and all other correspondence relating to this department, should be indorsed "For Knots and Tangles" and addressed to Puzzle Editor, 9 Third St., Sharon, Pa.

118. CHARADE.

First.

A prison window of a narrow cell,
Wherein a prisoner for life doth dwell;
Unto his prison walls he is chained fast,
And death alone can set him free at last.

Second.

A useful thing the wide, wide world over,
But valued less for what I am than what I cover.

Whole.

A curtain I, behind whose folds
Lurketh a being whose power holds
All things present, and all to come,—
Wonderful being and wonderful home. C. W. H.

119. OLD ANAGRAMS.

[These are a sort of satirical definition, or at least suggest the answer]

- | | |
|-------------------|--------------------------|
| 1. Moonstarers. | 6. It's in charity, |
| 2. Fat bakers. | 7. Got a scant religion. |
| 3. The bar. | 8. So tired. |
| 4. Got as a clue. | 9. O grab me! |
| 5. Hard case. | 10. Partial men. |

120. ANAGRAM.

In Trod Zero.

Where Zero never goes,
Except, perhaps, on mountains heights,
Amid perpetual snows;
Consider now where Zero went,
So far from frigid pole;
But soon his steps he homeward bent,
And reached his icy goal. "PORT FOLIO."

121. DIAMOND.

1. A letter. 2. Lighted. 3. Regards with affection. 4. A number that divides. 5. Peevish. 6. A sauce for fish. 7. A consonant.

122. REBUS.



ANSWERS TO MARCH PUZZLES.

112. Rainbow.

113. Israelites, Isaacar, Mesopotamia, Mephibosheth, Eneas, Lydda, Philippi, Macedonia, Machpelah, Ethiopia, Sapphira, Matthew, Bathsheba, Bartholomew, Bartimeus, Cyprus, Beulah, Charity, Samaria, Sennacherib: "So teach us to number our days that we may apply our hearts unto wisdom."

114. 1. Deserted Village. 2. The Traveller. 3. She Stoops to Conquer. 4. Vicar of Wakefield. 5. The Captivity. 6. The Hermit, by Oliver Goldsmith.

$$115. \frac{(Xc - X) + (XL - X) + (XXIV - I)}{(XIX - I) + (IV - I)} = \frac{175}{25} = 7.$$

116. Cleveland, Lowell, Indianapolis, Nashville, Tallapoosa, Ontario, New Haven, Boston, Fanshull Hall, Iowa, Sandusky, Keokuk, Clinton B. Fisk.

117.

I.
A L I A S
L A N C E
I N D E X
A C E L E
S E X E S

II.

C A A B A
A L M U G
A M A T O
B U T E O
A G O O D

Answers have been sent in by Agnes L. Kenney, Mary Yurging, Maggie F. Hendricks, Flora F. Landes, M. Louise Collins, and No Name.



ON THE WAY TO SCHOOL.

Tune, "Coming Thro' the Rye."

BY ADA SIMPSON SHERWOOD.

All the merry birds were singing
On the way to school,
And the woods with joy were ringing
On the way to school,
Come away, the birds were saying,
Disobey the rule;
Such a merry time for playing!
Do not go to school.

From the hedge the flowers were peeping,
On the way to school,
Waking from their winter sleeping,
On the way to school.
Come away, the flowers were saying;
Disobey the rule;
When 'tis time to go a-Maying,
Do not go to school.

Bright and green the grass was growing,
On the way to school,
And a gentle breeze was blowing,
On the way to school.
Come away, the fields were saying,
Disobey the rule;
Here's a joyous place for playing,
Do not go to school.

Oh, we love this world of beauty,
On the way to school;
But we'll never flee from duty,
On the way to school.
Though woods with joy are ringing,
We'll obey the rule,
While the merry birds are singing,
On the way to school.

WHAT "PUSSY WILLOW" SAYS.

(Arranged for the Little Ones.)

BY DOROTHY.

All.—

Darling pussy willow,
Come to greet the Spring,
With your furry softness,
You precious little thing!

First Boy.—

You have come to tell me
Winter's gone away;
Old Jack Frost has scampered
'Way off north, to stay.

Girl.—

With your furry softness
Pressed against my cheek,

Of the robin redbreast
I can hear you speak.

Girl.— To me you whisper, whisper,
Child of early Spring,
Of butterflies and insects
That soon will flit and sing.

Girl.— I can hear you prattle
Of the gentle showers
That come to us in April,
To hurry May-time flowers.

Girl.— Dear, sweet pussy willow!
You ever say to me,
"Soon you'll hear the humming
Of the honey-bee."

Boy or Girl.— I listen, and can hear you
Surely, sweetly say,
"Soon will come the summer,
With long days for play."

Boy.— Pretty pussy willow,
With my bait and hook
You tell me I'll be sitting
Fishing in the brook,

Boy.— And I, dear pussy willow,
Can give my kite a fly,
When the days are sunny,
'Way up in the sky.

Boy or Girl.— You tell me of the birdlings,
In their little nests,
With soft, downy feathers
On their pretty breasts.

Girl.— I will listen, listen,
Listen hard, until
I shall hear you whisper
Of the whip-poor-will.

Boy or Girl.— You tell me, pussy willow,
That I soon can go
On the gliding river,
To have a lovely row.

Boy or Girl.— You make me think of blossoms,
Pink, and white, and sweet,
On the boughs of trees,
Or nestling at my feet.

(All repeat first verse.)

[The children should be furnished with bunches of willow catkins to be used as the judgment of the teacher dictates. Each should address his or hers in reciting.]

THE TRAVELERS' GAME.

(Tune, "Little Travelers.")

BY BELLE ST. JOHN PHARSON.

Teacher (to a small company of children who are standing before her.)

Who are these little folks so gay,
That stand before me in the way?

Children.— We are little travelers, marching, marching,
We are little travelers marching on.
To the North, the land of snow,
Where the icy breezes blow,
We are little travelers, marching, marching,
We are little travelers marching on.

Teacher.— Farewell, my little travelers,
May your journey pleasant be,
In going to the North land,
Remember all you see.

(Children shake hands and say good-by, then go to north side of room, and return.)

Teacher.— What! back so soon, my roving friends,
From the land of the Esquimaux?
What did you in that northern clime
Where Jack Frost's breezes blow?

First Child.— I made some snow-balls; here is one.

Second Child.— (Shows a white ball.)
I saw a polar bear, and home did run.

Third Child.— From a pretty seal I begged a muff.

Fourth Child.— I tamed a reindeer, with horns so rough.

All.— The winds blow cold in the North land,
And the storms are fierce and wild,
But there we find the warmest furs
That are ever worn by a child.

Teacher.— Well done, my little travelers,
Your tales we love to hear;
You have traveled far and well to-day,
And we thank you with right good cheer.

(The children take their seats, and another company stand before the teacher.)

Teacher.— Now who are these little folks so gay,
That stand before me in the way?

Children.— We are little travelers, marching, marching,
To the South we haste away,
Where the birds in winter stay;
We are little travelers, marching, marching,
We are little travelers marching on.

Teacher.— Farewell, my little travelers,
May your journey pleasant be;
In going to the South land,
Remember all you see.

(Children shake hands and say good-by, go to south side of room, and return.)

Teacher.— What! back so soon, my roving friends,
From the sunny South so fair?
Pray tell us how your journey went,
And what you saw when there.

First Child.— I brought an orange back to you.

(Hands orange or orange-colored ball.)

Second C.— I brought all kinds of spleen, too.

Third C.— I brought some bananas, ripe and yellow.

Fourth C.— And here is an oriole, handsome fellow.

All.— Fair and sweet is the South land,
Where the birds sing all the year,
Where flowers and fruit in plenty grow,
And naught from cold we fear.

Teacher.— Well done, my little travelers,
Your tales we love to hear;
You have traveled far and well to-day,
And we thank you with right good cheer.

(Children take their seats, and another company take their places.)

Teacher.— Now who are these, etc.

Children.— We are little travelers, etc.
To the West, with step so light,
Where the sun sets every night.
We are little travelers, etc.

Teacher.— Farewell, my little travelers,
May your journey pleasant be,

In going to the West land,

Remember all you see.

(Children say good by, go to west side of room, and return.)

Teacher.—What! back so soon, my roving friends,
From the far Western land?
Pray tell me of the wonders there,
My merry, happy band.

First Child.—Great fields of grain in beauty growing.

Second C.—And many cattle gently lowing.

Third C.—Grapes and sweet fruits in number untold.

Fourth C.—Mountains stored with silver and gold.

All.—The land in the West, the land in the West!
We think that land is far the best.

Teacher.—Well done, my little travelers, etc.
(Children take seats, and another company come.)

Teacher.—Now who are these, etc.

Children.—We are little travelers, etc.
To the East we'll quickly run,
There to see the rising sun.
We are little travelers, etc.

Teacher.—Farewell, my little travelers,
May your journey pleasant be;
In going to the Eastern land,
Remember all you see.

(Children shake hands and go to east side of room.)

Teacher.—What! back so soon, my roving friends,
From the land of the rising sun?
Please tell us of the sights you've seen.
And of the deeds you've done.

First Child.—Here is a piece of nice fine silk.

Second C.—Here are cheesec made from milk.

All.—We saw fine silks and laces,
And people with strange faces.

Teacher.—Well done, my little travelers,
Your tales we love to hear;
You've traveled far and well to-day,
And we thank you with right good cheer.

NED'S BLUEBIRDS.

BY LILIAN RAY.

(Scene opens with the little mother (one of the older girls) at her sewing. Ned enters and sits down on a stool beside her. He twirls his cap and looks occasionally into the mother's face. She watches him a moment.)

Mother.—What is it, dear?

Ned.—Why, mamma, is it not full time for the bluebirds? The sun is so warm, and I heard Joe Barnes say that the arbutus will soon be in blow.

M.—Yes, I have been watching for the little blue-coats this week, and think they will be here soon,—perhaps to-day.

N.—Oh, I'll be so glad! (Birds in the distance chirp.)

M.—Ah! what is that? (Both listen.)

N.—Oh, it is the very birds themselves! Goody, good! (He drops cap and runs across the platform, clapping hands.)

(Three or four boys and same number of girls, with as much blue about them as is convenient, represent the birds. They come forward, and standing at edge of platform, the girls hum some familiar tune, while part of the boys chirp, or say "Chee, chee," at intervals.)

N. (running to his mother).—May I not have some crumbs? Maybe they will take some of them, as the chickadees did last winter.

(Mother goes to closet and brings out bread and gives him. He crumbs this into the extended aprons of the girl-birds and caps of the boy-birds, which they eat, with an occasional chirp. Mother stands by the boy and watches them.)

N.—I wonder what they will do next.

M.—We'll have to wait and watch. (She picks up her sewing, but works little.)

(Birds scatter and begin to examine various quarters, now in pairs, now singly, chirping all the time, especially when together. Finally they pair off, and choose places for nests. Then they sing, each pair a verse in turn, if possible.)

Birds.—

Here we'll build our pretty nests, pretty nests, pretty nests;
Here we'll build our pretty nests, chee, chee, chee.

I know where some sticks are found, sticks are found, sticks are found;

I know where some sticks are found; come and see.

We'll find horsehair in the field, in the field, in the field;
We'll find horsehair in the field, chee, chee, chee.

(A tall boy with a play gun enters, marches up and down before platform, looking about. The birds crouch down, as though hiding. Just as he finds a bird and levels his gun to shoot, Ned sees him and rushes forth.)

N.—Oh, please, sir, don't fire! Why would you shoot the pretty little birds! (Man lowers his gun and looks amazed at Ned, then says:)

Man.—Why, I'd like to go gunning; and then you know the bluebirds sell well to put on ladies' bonnets.

N.—Yes, sir; but they are so pretty and happy, flying about and building their nests, that I cannot think God made them just to be killed. Surely we need their songs much more than the ladies need them on their hats.

Man.—You make me think of my little boy. He loves the birds, too, and for your sake and his I will shoot no more birds.

N.—Oh, thank you, sir. I am sure the birds will love you for it.

Birds (in chorus).—Thank you, thank you, chee, chee.

(The mother comes forward and puts an arm around Ned, and smiles. The hunter lifts his hat to her, shoulders his gun, and marches off. Birds begin to chatter, hum among themselves, and fly about, throwing their arms for wings. A boy from a distance shoots an arrow in the direction of the birds, but hits none. Ned sees it, and hurries out to meet him.)

N. (to himself).—How could he do it? (Turning to Joe.) Oh, Joe, father has made me a lovely new target, and we will have such fun shooting at it with our bows and arrows. And say, Joe, I've got a secret that I will tell you, if you will promise to help me keep it.

Joe.—Hurrah! that's a dandy! I'll never tell. (Ned whispers to him.)

Joe.—Oh, pshaw! they are nothing but birds.

N.—Yes, but God made them, just as well as he did boys and girls. Just come and see the cunning little fellows. (He leads Joe around to see the birds, who fly about. Boys come back and sit down on edge of platform.)

Joe (dropping his bow and arrow).—They do look pretty happy! I say, I'll come around this afternoon, and we'll try that target. I must go now, for I promised to play marbles with Sam Brown this morning.

(Exit Joe. Ned clasps his hands about one knee and swings backward and forward, while he whistles softly to himself. Birds all flutter about him and sing.)

Birds.— Bless you, bless you, little lad,
You have made the birdies glad;
Bless you, bless you, little lad,
We will not forget you.

(Birds exit in pairs. Ned rubs his eyes and watches them, then jumps up and taking the little mother by the hand, leads her from the stage.)

Notes and Queries.

Questions and answers for the Notes and Queries should reach us by the first of each month. We respectfully request all the readers of THE TEACHER to take part in the discussions of this department. Send in questions, and furnish answers to questions given.—Eds.

ANSWERS TO QUERIES.

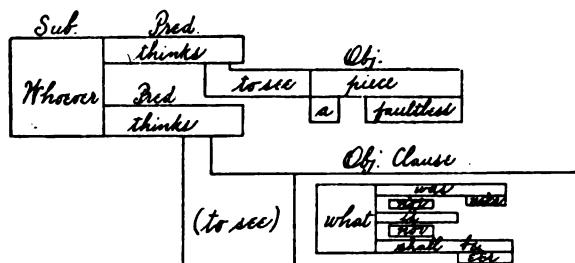
CORRECTIONS.

In the AMERICAN TEACHER for February, under "Notes and Queries," you diagram the following sentence:

"Whoever thinks a faultless piece to see,
Thinks what ne'er was, nor is, nor e'er shall be."

In your printed diagram several words are found that do not belong in any sense to the couplet, and the analysis seems to me to be otherwise incorrect. I do not see the propriety of making the word *piece* the object of *thinks*, nor of calling *a* an adverb, nor of changing *whoever* into *he* and *who*, all of which are done by your correspondent in the published diagram.

An analysis much more in keeping with the author's meaning seems to me to be the following:



Thinks in this sentence is used in the sense of *expects* or *hopes*. The second *to see* is clearly implied. It is clearer to dispose of *whoever* as the author used it, instead of making an entirely different sentence by substituting *he* and *who*.

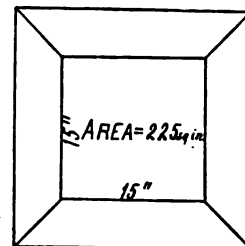
Bennington, Vt.

C. S. D.

In answer to problem 745 there is an error. The answer given is for one barrel of flour, and should be multiplied by 5 to give the result required. In 746 there is also an error. The results should be twice those given.

C. L. F., E. Peoria.

740. The plate of a mirror 18 inches by 12 is to be set in a frame of uniform width, and the area of the frame is to be equal to that of the glass; required width of the frame.



Since mirror is 18 x 12, it will take 60 inches of frame to go around it. I divide 60 x 4, which gives me a square of the same distance around, and will take the same number of inches in the frame. Now since the frame is to contain the same number of inches as the mirror, I have only to find the side of a square whose contents are $225 + 216 = 441$. $\sqrt{441} = 21$, and hence frame is 3 inches wide.

W. L. J., Burnt Hill, N. Y.

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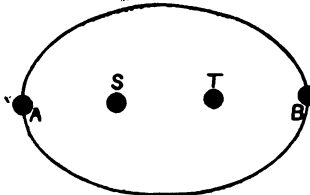
760. What are the most important points to observe in the study of an author's style?

The mode of expression, (1) as to figures, inversion, etc., (2) as to brevity, (3) as to force or strength of expression and reasoning, (4) as to logic of arrangement and argument, (5) as to rhythm or grace, (6) as to choice of words.

J. M. L., *Huntington, W. Va.*

762. Why is the earth nearer the sun in the winter than in the summer?

The earth is nearer to the sun in the winter than in the summer because the earth's path around the sun being in the form of an ellipse with the sun in one focus, S, in the figure, the earth on Dec. 22, is about the point A, while on June 22 its position is near B. T represents the other focus, the ellipticity of the figure being greatly exaggerated.



J. M. L.,
Huntington, W. Va.

Credit to E. M. B., Milton Mills, N. H.; E. J. P., LaGrange, Va.; and X. Y.

765. How are the words *London* and *1817* parsed in the sentence, "He was born at Moorfield's, *London*, in *1817*?"

London is a noun, proper, neut., 3d sing., obj. case, object of [in]. *1817* is a noun, common, neut., 3d, sing., obj. case, object of [of]. The sentence should read like this: "He was born at Moorfield's, in *London*, in the year of *1817*."

O. E. B., *Roswellville, O.*

Another opinion.—*London*, proper noun, 3d sing., neu., obj. case, object of in understood. "*1817*," numeral adj., modifies year understood. He was born at Moorfield's in *London* in the year *1817*.

X. Y.

Credit to R. S. M. Bethel, Pa.; J. H. C. McDonough, N. Y.

766. What offices do the waters of the earth perform?

The offices of the water on the earth are legion, but the most common are: (1) to disintegrate rocks and prepare soil for plant life, (2) to dissolve substances used as food by plants and animals.

J. M. L., *Huntington, W. Va.*

767. Define the terms "sidereal" and "tropical" year.

The time the earth takes to make a circuit of the heavens following the ecliptic is 365 days, 6 hours, 9 minutes, 9.6 seconds. This is called the sidereal year. The time from vernal equinox to vernal equinox, however, is 365 days, 5 hours, 48 minutes, 48.6 seconds, the difference being caused by the precession of the equinoxes. The latter period is called the tropical year. The sidereal year is the interval of time between two successive returns of the sun to the same position in respect to the same stars, or a fixed point in space; tropical year, the interval of time between two successive returns of the sun to the same tropic or the same equinox, being less than the sidereal year by 20 minutes and 19.9 seconds. This difference is caused by the precession of the equinoxes.—*Herschel*.

R. S. M., *Bethel, Pa.*

768. How are words in the heading of chapters parsed? For instance, "The Tortoise and the Hare."

They should be parsed as one word. The heading should be parsed as a noun in nom. abs. case by inscription.

A. B.

Credit to R. S. M., Bethel, Pa.

Another opinion.—This story is concerning "The Tortoise and the Hare." "Tortoise" and "hare" are in objective, governed by concerning understood.

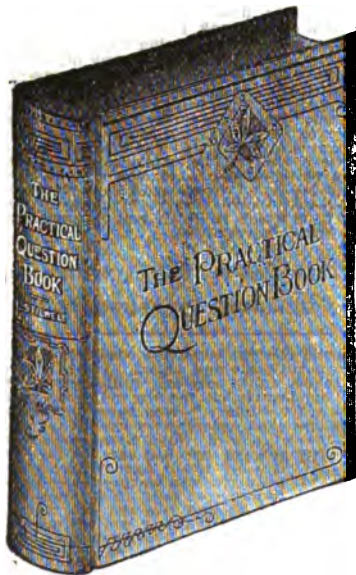
Will grammarians ever agree?—[Ed.]

771. Name the present Cabinet officers and the state each is from.

James G. Blaine of Maine, Secretary of State; Charles Foster of Ohio, Secretary of Treasury; Redfield Proctor of Vermont,

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V. S., Applebachville, Pa.

Credit to X. Y.; E. P. C., Etterro, Pa.; R. S. M., Bethel, Pa.; H. C., McDonough, N. Y.

772. Who are the present judges of the Supreme Court of the United States, and who is the speaker of the House of Representatives?

Chief Justice.—Melville W. Fuller of Illinois; Associate Justices, —Stephen F. Field of California, Joseph P. Bradley of New Jersey, John M. Harlan of Kentucky, Horace Gray of Massachusetts, Samuel Blatchford of New York, L. I. C. Lamar of Mississippi, David I. Brewer of Kansas, and Henry B. Brown of Michigan to fill the vacancy caused by the death of Samuel F. Miller of Iowa. The Speaker of House of Representatives is Thomas B. Reed of Maine.

Credit to E. P. C., Etterro, Pa.

R. S. M., Bethel, Pa.

773. A vessel making for the harbor fires a signal gun; the flash is seen from the harbor, and the sound follows in $22\frac{1}{2}$ seconds. A tug puts off immediately, and steams straight toward the vessel, at the rate of 12 miles an hour; and from the tug, 5 minutes after, the flash of a second gun is seen, the sound of which follows in 16 seconds. If sound travels 13 miles per minute, at what rate is the vessel approaching the harbor?

If sound travels 18 miles per minute, then $22\frac{1}{2} \times \frac{1}{60} \times \frac{1}{18} = \frac{1}{16}$ miles, distance of vessel from harbor when first gun is fired. Tug steams 12 miles an hour, in 5 minutes would steam 1 mile. Then $\frac{1}{6} \times \frac{1}{18} = \frac{1}{108}$ miles, distance between tug and vessel at firing of second gun. $\frac{1}{6} + 1 = 1\frac{1}{6}$ miles. $4\frac{1}{2} - 1\frac{1}{6} = \frac{5}{3}$ miles, distance vessel sails in 5 minutes. $\frac{5}{3} \times \frac{1}{5} = \frac{1}{3}$ miles, rate at which vessel approaches harbor per hour.

X. Y.

Another solution.—18 miles per minute = rate sound travels; $\frac{1}{3}$

miles per second = rate sound travels. Rate \times time = distance; therefore $\frac{1}{3} \times 22\frac{1}{2} = 4\frac{1}{2}$ miles, ship's distance from harbor when first gun was fired. If tug moves at rate of 12 miles per hour, in 5 minutes it goes 1 mile. $4\frac{1}{2} - 1 = 3\frac{1}{2}$ miles, distance apart vessel and tug would have been if vessel had not moved. $\frac{1}{3} \times 15 = 5$ miles, distance they were from each other. $3\frac{1}{2} - 5 = \frac{1}{2}$ miles ship has moved in 5 minutes. $\frac{1}{2} \times 12 = 6$, or $7\frac{1}{2}$ miles per hour.

L. M. B., Milton Mills, N. H.

Credit to H. A. P., Stormville, N. Y.; A. B. K., Pickering, Pa.; E. P. C., Etterro, Pa.

775. The diagonal of a square field is 240 rods. What will it cost to fence the field at \$2 per rod?

$240^2 = 57600$; $57600 \div 2 = 28800$; $\sqrt{28800} = 169.7$ rods, length of one side. $169.7 \text{ rds.} \times 4 = 678.8 \text{ rds.}$; $678.8 \text{ rds.} \times \$2 = \$1357.60$.

Credit to E. P. C., Etterro, Pa.

Ira C., Clintonville, Ohio.

777. A 12-inch ball is in the corner where walls and floor are at right angles. What must be the diameter of another ball which can touch that ball while both touch the same floor and the same walls?

There will be two balls, one larger, the other smaller than the given ball. Put $r = 6$ = radius of given ball; x = required radius. Distance from center of ball to corner of room = $\sqrt{(r^2 + r^2 + r^2)} = r\sqrt{3}$. From nearest side of ball to corner = $r(\sqrt{3} - 1)$; from furthest side = $r(\sqrt{3} + 1)$.

$r(\sqrt{3} + 1) : r(\sqrt{3} - 1) :: r : x$. $x = r(2 - \sqrt{3})$, smaller ball.

$2(\sqrt{3} - 1) : r(\sqrt{3} + 1) :: r : x$. $x = r(2 + \sqrt{3})$, large ball or

$x = r(2 \pm \sqrt{3}) = 22.392$ radius of large ball.

1.608 " " smaller ball.

Diameter of larger ball 44.78. Diameter of smaller ball 2.164.

A. M. SCRIPTURE, New Hartford, N. Y.

Credit to J. H. A., Columbus, Pa.

Another solution.—Find the diagonal of the cube from which a

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DICK AND DON.

[For the Third Gift.]

BY ROSA M. DUFFIELD.

[The story has been adapted to the use of the kindergartner, and the forms originated by Rosa M. Duffield. The drawings were made by Louise Gray.]

WHEN summer came and school closed Dick went to pay a visit to his Uncle Richard. Dick was very fond of his Uncle Richard, and he loved to visit him, for Uncle Richard lived on a large farm, while Dick's home was in the city. It seemed to Dick that he found something new every day, — a field of wheat or corn, with berries growing along the fence, or a bit of woods with wild flowers growing under the shade of the trees; or, better still, a stream with places in it full of fish, which he could try to catch with hook and line. One day his Uncle Richard took him to a pretty, little lake, with trees all around it, and water-lilies floating on the water. A boat was tied at the shore, and Dick was delighted when

Uncle Richard told him to jump into it and he would teach him how to row.

Dick found a great deal of pleasure in his visit that summer. Once Dick heard a dog barking and whining, as if in pain, and running to him he found the dog had a large stone on his fore paw and could not take it off. It was a very large Newfoundland dog, with black and white curly hair. He had tried to jump over the fence

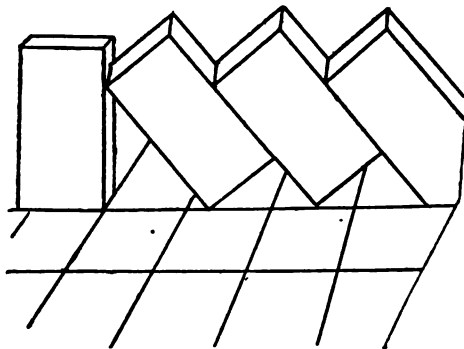


FIG. 1.

(Fig. 1), but instead he had touched a pile of stones, one of which had rolled down and caught his paw under it. Dick very gently pulled away the stone, and the dog thanked him by jumping up on him, running around him and trying to lick his hands. But when a whistle was heard, and a man called "Don! Don!" then the dog



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ran to the man, and Dick knew that the dog's name was Don.

A few days after this, as Dick was in the boat, he saw a beautiful water-lily. Dick thought he would pull it, and leaned out of the boat. But water-lily stems are wet and slippery, and Dick leaned too far out when he pulled.

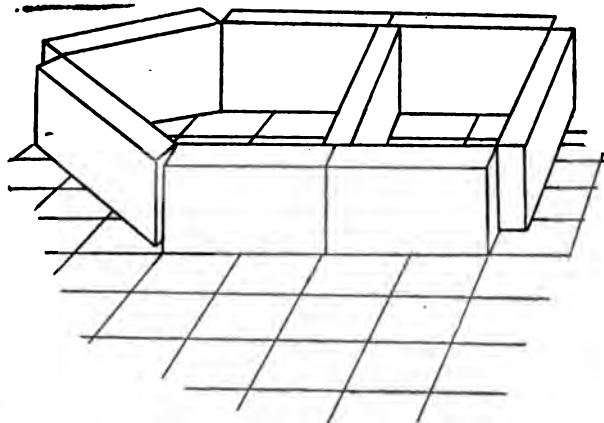


FIG. 2.

The boat turned too much, and poor Dick fell into the water. He screamed as he sunk under the water, and he was very much frightened. He knew he could not swim, and felt that he was drowning. But as he came up he was caught by the collar, dragged through the water and up on the shore, and when he opened his eyes there was

Don licking his face. Dick threw his arms around Don's neck and hugged him.

So Dick and Don became great friends. Dick loved Don for saving him from drowning, and Don loved Dick

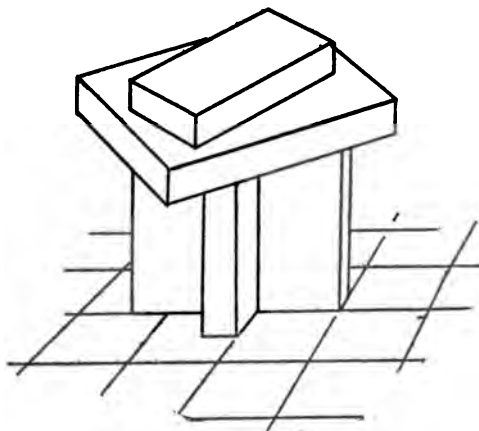


FIG. 3.

for taking the stone off of his paw. They had many romps together, and Don would even go out in the boat (Fig. 2) with Dick.

Well, one day as Dick was in his room reading, he heard a knock at the front door. He went to the window and saw a man standing there with a chain around Don's neck. He threw his book on a table (Fig. 3), ran

COLOR IN THE KINDERGARTEN.



THE AMERICAN TEACHER for January says, editorially: "It is not safe for anyone to talk or write of color who has not learned of the recent revelations." That is one reason why you should send a postage stamp, value two

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down the steps (Fig. 4) to see what the man wanted. By that time Uncle Richard had opened the door (Fig. 5)

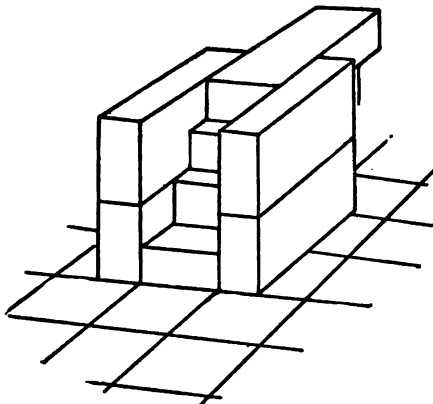


FIG. 4.

and the man was asking him to buy Don. You may imagine Dick's delight when Uncle Richard bought the dog, and put the chain in his hand, saying, "Dick, you may have Don for your own; you were kind to him and he saved your life." Why, Dick jumped up and down for joy, and I suspect Don barked for joy, too. When Dick went home Don went also, and they always loved each other very much.

[Froebel recognized the educational value of wisely chosen stories. The preceding story shows what a use-

ful lesson in form may be taught to little children by it, and at the same time stimulate the imagination of the children. Everything depends upon the wisdom of the kindergartner in the selection of the story which is adapted to the "gift." A story that is told simply because it is a story, without any adaptation to the work to be illustrated, has no place in the well-ordered kindergarten.—Ed.]

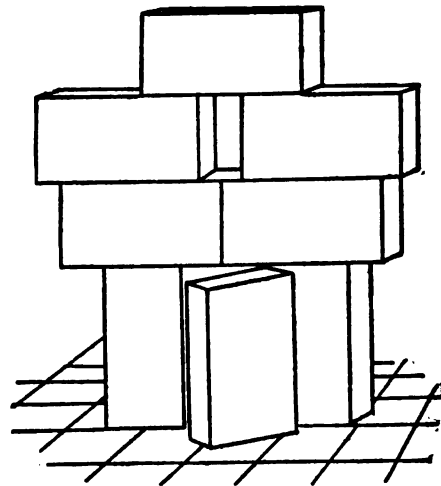


FIG. 5.

NOTE.—Fig. 5 shows the window from which Dick looked, and the door after Uncle Richard opened it.

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This list could be extended to occupy many pages by taking in men of less prominence, but the men we have mentioned are **great** men,—men with a national reputation, and the fact that they personally solicited our recommendation and selected one of the three or four whom we recommended, is certainly the highest honor that an agency could ever expect to attain. Hundreds of calls are coming to us every week for teachers. Seven hundred teachers were placed by us last year, and from the present outlook we shall place one thousand this year in better positions than the ones they are now filling. Will you be one of these? If you can prove by testimony that you are capable of filling a better place, and will undertake to prove this to us, the sooner you begin correspondence with us the better. Send for circulars to the

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The morning bell hour should strike the key note! Watch the children come filing in,—a child's face does not disguise his thoughts,—one child, naturally bright and sunny, comes in all fresh and sparkling from a pleasant home; it is no effort for such a child to make sweet music. Another, born with an unhappy disposition, with a "hair trigger," needs but a touch to set it off, and bring to the room only discords. This child requires wise treatment. Some children are naturally mischievous; allow such to help you. Others are out of tune generally, and need a firm hand to ply all the gentle arts that love can dictate in their management.

The kindergartner should have a pleasant smile and a kind word for each pupil. The morning songs must have a cheerful ring to them; the hymns be softly and reverently sung. Now all are ready for the morning talk.

It is not an easy thing to conduct a morning talk in a

manner to hold the attention of a dozen or more little ones, but it can be done with adequate tact. Who has not seen a circle of earnest little faces turned toward the kindergartner while she talked in a pleasing way of some object held in her hand? How often is one saddened by the sight of discontented glances, restless feet, and busy tongues, as the teacher laboriously explains her subject in stilted, textbook language? She is talking above their heads.

In talking to a child the teacher must use *his* vocabulary to some extent. Of course the better one understands the subject about which she is talking the more simple she can make it. Books are a great help, but actual experience with her subject, in description, will make her words more inspiring and entertaining. A teacher who had raised silk-worms found that she had one morning talk that never failed to interest. Another had visited all the manufactories that were accessible, and at each place had obtained samples of materials used, and so began her work armed and equipped for many a bright morning talk. Those living in mining regions have an excellent opportunity for following out the lessons on metals. Collections of precious stones and metals are very useful and are easily obtained. All specimens can be readily mounted on cards and labeled; leaves and

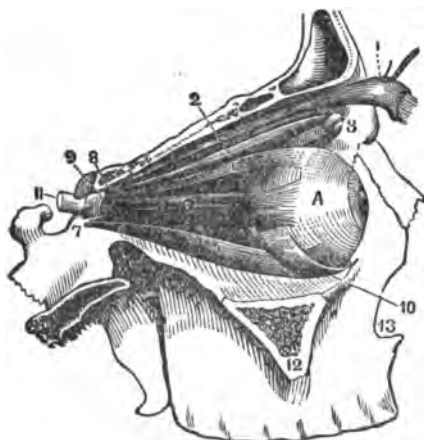


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There are "first times" to learn things, but they never lose their charm, and the wise teacher will make the most of her opportunities for satisfying this youthful craving. For the children's sake the teacher must throw interest into every talk. She must "love science to make it lovely," finding "the spirit that lies under the facts." This is the secret of right instruction.

If there is a lesson to be learned, a truth to be unfolded, the child should be made to understand it. The humblest of God's creatures have a mission to perform, and a place somewhere sacred to His person, and nothing should be misused or treated with contempt. Lessons of patience, gentleness, humanity, and love should be brought home while listening to anecdotes illustrating traits of humanity. The children may not appreciate now all the labor and care, but some day over the bridge of years may come a heart-felt "God bless you," from each of them.

THE reasons for the establishment of free kindergartens, published in the March number, was from the pen of Mrs. Louise Pollock of Washington, D. C. Mrs. Pollock has been one of the great pioneers in the introduction of the principles and methods of Froebel into this country. Her petition in behalf of the citizens of the District of Columbia, to the Congress of the United States, that legislate for the cities of Washington and Georgetown, is eminently worthy of favorable consideration.



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THE KINDERGARTEN IN CALIFORNIA.

THE eleventh report of the Golden Gate Kindergarten Association is one of the most remarkable and encouraging documents ever published. It shows the true spirit that prevails among the noble band of women on the Pacific Coast who have pushed forward the great and good work. They have been in deed earnest from the beginning. They have been a consecrated body of workers for the good of the children and mothers of the state. The growth of free kindergartens has been phenomenal, and the results prove that it is possible to bring to the neglected children the rich blessings of the kindergarten training. Over seven thousand little children, during the past eleven years, have been brought under the benign, healthful influence of these free kindergartens.

There is a steady stream of influence that flows back into the families, which tells for good, no matter how wretched and degraded the households may be. The parents come to feel that their children are of some value, and they treat them with more consideration and kindness. The children feel that somebody loves them, and they unfold and blossom like plants in the sunshine. The best way in the world to get hold of fathers and mothers is to get hold of their little children. There is no way half so potent to reach adult wrong-doers as through the avenue of childhood.

After eleven years' work there are twenty-four free kindergartens, under the Golden Gate Association, with 2,183 little children. The income last year was \$31,867; \$125,000 has been given by the citizens of San Francisco during the last eleven years; Mrs. Stanford has given \$100,000 to endow her kindergartens. There are now fourteen kindergartens endowed. Mrs. George Hearst sustains three free kindergartens, and is about to start a manual training school under the auspices of the Golden Gate Association. Mrs. Sarah B. Cooper, the president of the Association, says that the past year has been, by far, the most successful of all the busy years. Five new kindergartens have been established. Ladies of wealth are devoting themselves to this important work. It is said

that no less than fourteen millionaires are connected with the work.

To Mrs. Sarah B. Cooper, the president of the Golden Gate Kindergarten Association, belongs the great credit of this important work. She has secured the generous cooperation of wealthy and influential, who, under her guidance and impetus have by their private benefactions accomplished these grand results. Mrs. Leland Stanford has contributed over fifty-two thousand dollars toward the support of the free kindergartens, seven of which are Stanford Memorial Kindergartens. Thousands of little children have been taught in these lovely school homes. Three free kindergartens sustained by Mrs. George Hearst, and the generous gifts of Mrs. Hearst have come without solicitation.

Mrs. Cooper says truly that "the kindergarten is the life-means to which the poor children may instinctively turn, when maturely hurled against the life-wrecking problems of existence. Thus our faithful kindergartners fill the place of teacher, friend, helper, and mother, all in one."

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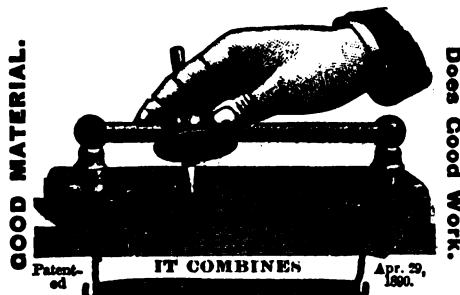
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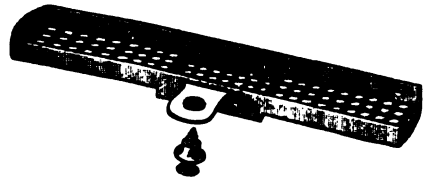
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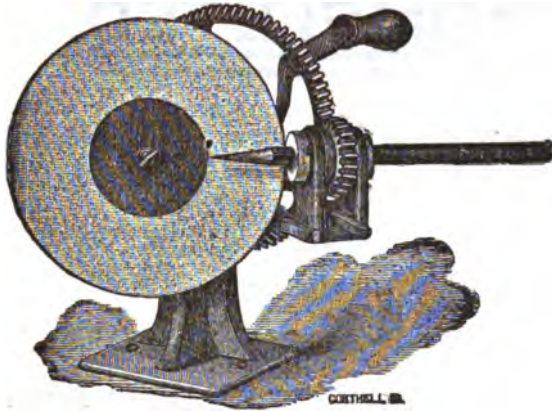
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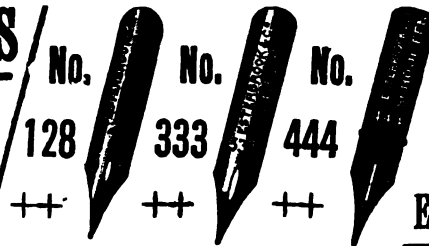
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AMERICAN TEACHER.



VOL. XIV.

DEVOTED TO THE METHODS AND PRINCIPLES OF TEACHING.

No. 9.

THE BROOK'S LESSON.

BY ANNA B. BADLAM.

A TINY, silvery stream it seemed,
As o'er the mountain-side it gleamed,
And wound its humble way along,
Blithely singing its little song.
Had it a mission? By whom sent?
On what errand was it bent?
Or did it fear the question ask,
Whether 't were not too great a task
To wind itself, now here, now there,
Now far below from light and air;
Now oft times winding in and out
The stones and pebbles round about;
Now glancing up in glad delight
To greet the mellow sunlight bright,
Now murmuring thro' the wood's cool shade,
Now leaping wildly, half afraid,
From fallen tree or dizzy height,—
Now babbling thro' the meadows bright
With waving buds, which nodding lean
Over its banks, while may be seen
Mirrored within its depths, each face
Glancing back in wild, free grace?
Each day it seemed to grow more bold,
And gained fresh strength, as it grew old;
I doubt if e'er it thought at all
Of toil or ill that might befall;
Simply to know its Lord's intent,
To follow out the message sent,—
"Strive well to fill thy place,
And be not weary in the race";
This song it ever seemed to sing,
May it to us contentment bring!

PEACE.

W ITH tender touch, the gentle rain
Has kissed to bloom the buds of May,
And violets' eyes look out again
On our Memorial Day.
The rose is red with blood no more;
No more the young leaves wet with tears;
The wild birds sing where battles' roar
The echoes waked through four long years.
The dove of peace with folded wings
Broods o'er the land from North to South,
And lilies bloom and ivy clings
Around the cannon's rusted mouth.
Oh, heroes, whom to-day we weep,
Rest calm beneath earth's grassy waves,
The stars, you died unstained to keep,
Are shining still above your graves!

ANNIE M. LIBBY.

PLAYING FOR KEEPS.

BY C. S. BURNETT,
Supt. City Schools, Eureka Springs, Ark.

A BOUT a year ago our boys began playing marbles on the grounds of all the schools in the city. There was nothing unusual about this occurrence or recurrence,—it was what followed. The boys played "for keeps," and the game took possession of their brains. Games were played in the pockets of the boys during school hours. Marbles rolled out on the floor. Fights on the school grounds about cheating in various ways were frequent, and gave the teacher a deal of trouble. "For Keeps" seemed to have taken form like unto the Pied Piper of Hamelin, and carried away the entire school.

At one of our teachers' meetings nearly the entire time was devoted to the discussion of "Playing For Keeps." The majority of our teachers favored a suppression of the evil at once, and by means of the Irishman's "main strinth." Something must be done, and, as we saw the situation, not by force.

"Character banners" were devised for trial in each grade at the Central Building. An appeal to the good that God has planted in every heart was made through the banners, and by the words from teachers and superintendent. The banners were hung upon the school-room walls, and on these in bright colors were the following words, which served as stones in the building: Courage, Truth, Honor, Virtue, Pride, Duty, Love, Obedience, Ambition, Knowledge, Kindness, Politeness, Temperance, Faith, Hope, Charity, Success.

The inscription on the capstone of the building was "Boys Who Never Gamble With Marbles."

The evil side having been presented, good triumphed, and the boys placed white cards with their names written thereon as stones in the building of character.

"Unto him that overcometh shall be given a white stone, and on it shall be written a new name," became the motto of our boys, and in less than a week a moral lesson had been effectually taught, and "For Keeps" had gone under the hill, but no child in the public schools had followed.

In the grammar school the teacher and the boys became so enthusiastic that the marbles won during the

reign of "For Keeps" were built into a monument, which occupies a corner of the room, and stands as a lasting memorial to the good that was done.

Another year has come, and the structure, which was builded to last for aye, stands in all its beauty, because its foundation was laid down in the bed-rock of the hearts of our boys, and the storms of the ages to come will not

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BOYS WHO NEVER GAMBLE WITH MARBLES.

Dan Taylor

Success

Courage

Harry Thomas

Fred Bolton

Kindness

Hope

Temperance

Politeness

Honor

destroy it. True, some of the builders tried to remove the stones they placed in good faith, but the weight about them was too great, and they could not accomplish their desires.

Playing "For Keeps" is no crime, but it is a lesser evil which every teacher well knows, and it should be dealt with accordingly.

IN Brussels the number of adult illiterates is estimated at between 10 and 20 per cent. of the population. The per cent. of illiterates among those dying during the past year was 10 per cent., while among those applying for permission to marry 18 per cent. were illiterate.

ZACHARY'S FIRST YEAR AT SCHOOL.—(VIII.)

BY SARAH L. ARNOLD.

THERE was a ripple—perhaps even a wave—of delight in the Littletown school, one day in early spring. The children, always happy, this day were overflowing with gladness. An air of dignity and responsibility pervaded all their work. Their study was never more earnest, their ways never more winning, Miss Soule thought. And she knew the secret of it all.

The next day was to be Mothers' Day. The night before every child had carried safely home to his mother a little note, in Miss Soule's own handwriting, inviting the mothers to attend the school exercises on Friday afternoon. Zachary had hurried home with his little missive, as if with Mercury's feet, and had explained eagerly the reason for the invitation. "You see, Miss Soule wants our mothers to know how we have been working all the year. So the mothers of all the children are coming, and we shall read and write and spell and do our number work, and have our language lesson just as we always do. And you can see how much we have learned this year. Miss Soule says the mothers are gladder than anybody else when we do well. And she often talks with us about our mothers and what we can do for them. Seems to me I don't help you very much. Mike Driscoll says his mother won't have to take in washing when he grows up. He will take care of her then. He has earned a new suit of clothes selling papers. I wish I could sell papers and take care of you."

Mrs. Deane looked lovingly down at the earnest face, and brushed the golden hair gently from the high forehead. "You help me already, dear," she said. "I am happier every day because you are learning to take care of yourself so well. That is the way you will grow strong enough to take care of me."

Mike Driscoll had carried his note, with this same enthusiasm, to his mother. "Just see how sweet it smells, mother! And I can read it to you. I read it to Miss Soule, so I know what it says." And the boy carefully opened the little envelope, drew out the neatly folded note, and read, though in labored fashion:

Dear Mrs. Driscoll: The children and I would be very glad to have you visit us Friday afternoon, to see the work of the school. Michael has tried very hard this term, and I think his work will please you.

Yours truly, MARGARET SOULE.

A "real letter" was a rare event in Mrs. Driscoll's life. She asked her son to read the note again and again, exclaiming meanwhile at his ability to "read the writing," and at the kindness of the teacher. There was a big ironing to be done on Friday, she said, but she would get up early to do it in the morning, since the teacher had sent her a "special invite." Mike rejoiced in her decision, and worked valiantly at the woodpile to expedite the preparations.

soon, and they meant to do so. But they were busy men, and they quite forgot. So the little school moved on without further examinations, other than the helpful suggestions of the superintendent and the friendly visits of Mrs. Deane. Miss Soule grieved a little that her pupils had appeared to disadvantage in the eyes of the committee, but she had faith that her purpose and plan were right, nevertheless, and was brave enough to work on without approval if need be, however she might desire praise. It was a help to have Mrs. Deane's friendship and counsel, and Mrs. Driscoll's cordial blessing.

"Mike ain't the same boy he was, and you're the cause of it," his mother said, gratefully. "Zachary will be a better man because he has had your care," said Mrs. Deane. That was reward worth having, Miss Soule thought. She took courage, and went forward.

SOME THINGS NOT TAUGHT IN SCHOOLS.

BY S. A. B.

THE "First Readers" were reciting. The superintendent came in just as Freddie was reading, "Jöhn—häs—ä—drüm—änd—I—håve—ä—knife."

The words had all been given, and the teacher was ready for the "Next," when her visitor turned to the boy.

"Now, if your teacher is willing, I wish you would look right at me and tell what the book says about you and John."

The words were repeated with no more expression than before.

Finding all attempts with this particular sentence useless, the superintendent held up his own knife, saying, "Here is a knife, and you may have it if you will ask me for it just as you would talk."

It was a tempting offer, but the force of habit was too strong, and "Pläse—māy—I—tåke—yōur—knife?" came in the same drawling monotone.

"Not right yet. Speak just as you would if you asked your mother for it."

"Thāt—is—thē—wāy—I—åsk—hēr." Several more trials were made before the coveted reward was earned by the child's use of a natural questioning tone.

So hopeless a case as this may not be common, but the story is not exaggerated, and it illustrates a style of reading often heard in our common schools. The ability to speak or pronounce words readily is too often allowed to pass for good reading; while little or no attention is given to the expression, without which spoken words are dead and almost meaningless. There are exceptions to every rule, and there are individuals whose manner of reading is most pleasing, although they have had no training for it except that received in public schools.

In many schools, the practical application of lessons in the book receives too little care. The pupil may learn all that is said about cord feet and cords of wood, but 8

feet long and 4 feet high will not mean much to him until he learns that it will help him measure the woodpile in his father's yard.

A boy, reciting in geography, gave his definition perfectly, "Geography is a description of the earth's surface"; but when asked if he had ever seen the earth or any of its surface, he said he thought not, and not one member of the class knew that the playground was a part of it.

There is still great need of training the child's power of observation; of teaching him how to look at things; how to think about them and, — what is of great importance, — how to clothe the thought in simple but expressive language, then how to embalm this by the art preservative.

When Ted and Daisy came from school and tried to tell what they had read to-day, it usually was "a fox," or "'bout the chickies." Questions may elicit more information, and, if the lesson was in rhyme, quite likely one of them will repeat it word for word. But telling the story in their own words is often quite impossible.

It would be a matter for congratulation if this inability to tell what has been read was confined to the primary schools. But there are many pupils in the higher classes who have not been taught to do it, and who insist that they can learn a lesson in no way except in the exact words of the text.

Each year, hundreds of pupils "finish" in our graded schools. Most of these are expected to prepare an original manuscript for commencement. A large percentage of them have had little, if any, of the work which would make this task no more to be dreaded than any review or examination. To be sure, they all have "passed" in rhetoric, — some of them so long ago that the name is now but a faint memory, — perhaps they have written essays for Friday afternoon rhetoricals or for composition class; but the training should have begun long before they ever heard of rhetoric or composition. A pupil, trained up from the primary to write about the things he sees and hears, will need no one to write a commencement exercise for him; neither will he in the grammar room write for an essay such an article as the "way down East" school boy wrote about partridges.

Each of the class was to write something about birds. This boy was quite a hunter, and partridges were his favorite game, so he was told to write what he knew of them. He could talk well about them, and the teacher expected a good paper. Opening it, she read: —

"Partridges is a kind of bird. They have many colors."

The boy had done his best. He did not lack ability, but it had not been cultivated.

Surely, so long as pupils are expected to come before the public with exercises of this kind, and their scholarship is, to a certain extent, judged by the character of the production, it needs no argument to show the injustice of not providing more complete preparation for the work.

The mothers looked as happy as the children. Zachary watched eagerly as his mother examined his book. On the cover was written, "Work of Zachary Deane; for his mother." Every page showed painstaking work. The blunders and marred places were precious with the rest. There was his first attempt to write his name, and his name as written the day before. There were the first crude figures, and the later full-page work, in a fair hand. There were designs laid with colored papers, mats patiently woven, outline cards neatly stitched. There was the pressed golden-rod, to tell of the lesson on that flower; the drawing of the tadpoles, to recall that study; the flags that marked Washington's birthday, the guns that suggested the story of the battle of Lexington. And there was a little letter written to his mother, and a page of picture problems. Papers folded and pasted, and splints arranged in pretty figures, told of the drawing lessons. All spoke of the happy work of the busy little hands, and the new power to do that must be strengthening through such work.

After the good-night song and dismissal, Miss Soule had time to speak to the guests. Mrs. Driscoll held her boy's book proudly, as she thanked Miss Soule for being so kind to the lad. "I am glad I come," she said. "I thought the boy must quit schoolin', but I'll make a shift to keep him at it, for he likes it well, and it's well he may, for he's learning a heap, if I do say it as shouldn't."

Hew the teacher's heart rejoiced, and how richly her efforts were repaid. A glance from Mrs. Deane spoke her pleasure. She had grown to love Zachary's teacher-friend. "We must come often," said one mother. "How pleasant the school is! I shall always feel safe when Jamie is here." "I really had no idea what my children were doing in school," said another. "I shall keep this book to show Kate when she is grown up."

The good-nights were cordial, the interest sincere. The mothers felt their relation to the school as never before. The children rejoiced in their approval. And the earnest little teacher took heart, and turned to her work with renewed consecration. Why not have a Mothers' Day in every school?

WHAT SHALL WE PLAY AT RECESS?

BY E. L. W.

I SAY we advisedly, because every teacher ought to march out into the yard with the children, and stay there and play there with them. We need to be recreated more than the younger ones under our care. We must be sure to leave the windows of the schoolroom open at the top and bottom.

At this season of the year boys are prone to play marbles, while girls are inclined to jump the rope. There are strong arguments against both these games; and, although it might not be well to create an appetite for

them by making them a forbidden fruit, we can so direct that something else will grow in their places and they never will be missed. "Snap the Whip," "London Bridge," and "Leap Frog" are games in which quite severe accidents are likely to happen, and teachers need to maintain a careful oversight of such plays.

This term my girls bought a quantity of fancy ticking, and "for a sewing lesson" made it into bean bags. The boys got them filled, but one boy economized and filled his bag with corn. For a time we thought we would have to summon the "pied piper" to free our room from rats!

There are so many enjoyable and useful diversions with bean bags, such as Teacher, Circles, and Faba Bags, that they are without exception the best articles one can take to the play ground. Girls need games like these to develop the muscles of arms and chest, and teachers can indulge in them without losing too much of that awful dignity which generally envelopes them, and which might drop off too utterly if they played "tag."

Virginia Rows, a modification of the Virginia Reel, is a very pretty, graceful game for girls, and Puss in the Corner is always a favorite. Last week we had long measure in arithmetic, and at recess took our foot rulers and yardsticks into the play ground, and "played" with very good results. Sometimes we make the multiplication tables with pebbles, or make designs with a pointed stick, as they do in Hop Scotch. After a rain, when we have some "rivers" in the yard, we make cañons, and levees, and crevasses, and extensive systems of irrigation and drainage. It pays, and in more ways than one, to go out with the children at recess.

MISSION OF THE WILD FLOWERS.

BY E. M. H., LOWELL, MASS.

DURING the months of cold weather and snow-storms, I have often talked with the children of the beauty and loveliness that are in store for us with the coming of spring-time. They tell me with enthusiasm of the different flowers they have found, and I always try to have them remember, if possible, just the time of year and *where* they found them,—it is so pleasant to know just where and when to look for the friends we have met before.

I have watched the little eager faces very carefully at these times, and I am sure I speak of no flowers that awakens such pleasure in their minds as the violet. Of this family a large, pale blue variety, called by them the horseshoe violet (*viola pedata*), is the one most loved by all, the general favorite.

They like to tell me, "I know where I can get all I want of them"; and next comes the question, "Will you take a walk with us and get some when they are out?"

I want to tell you about this going out to get them, and

what we do with them. Our school has for some years been given a part of an afternoon when the violets are in their beauty, and with some three or four large paste-board boxes obtained from the dry-goods stores, we start for the fields. A comfortable place is found, where I sit, while the children stray off and soon return with their hands full of great lovely, soft blue violets, and frequently other flowers are brought, like butter-cups, anemonies, houstonia, grasses, and always a few sprays of the fragrant sweet fern and sweet briar. I make these into little bouquets, and, after sprinkling, place them in the boxes.

Little feet run swiftly, little hands are busy, little hearts are happy for an hour or so in this way till flowers enough are gathered to fill the boxes, and from one hundred and fifty to two hundred bouquets are carefully packed, and the boxes placed in some cool, shady place.

Now all are ready for some merry game, like "Hunt the Squirrel" or "Blind Man's Buff," and we have the very best of times till the sun gets low in the west.

But the violets, you say, what about all those bouquets of violets? They are taken home, placed in a cool cellar for the night, and early the next morning are sent by express to a city hospital, to be distributed among the sick children.

At the morning session each little face is animated and looks expectant,—they are waiting for pencils and paper, for all will write letters to the little unknown sufferers in the hospital, but only six of the very best ones will be selected and mailed. They tell in their childish way of the green fields, the bright flowers, the butterflies, the squirrels, the trees, and the brooks; of our merry games, and the pleasant afternoon we have had in woods and fields, "gathering flowers for you because you are sick, and we are so sorry you cannot run about as we do."

These letters are promptly answered, too, and there is so much of appreciation of the violets and gratitude for the letters expressed that there is no room left for doubt as to whether our plan is a wise one. The children to whom these letters are addressed take them to their seats to read by themselves first, then one by one they are brought to the desk and read to the school. There is always a pleasant note from some one of the nurses or the matron, and not infrequently from the superintendent of the hospital, telling us of the pleasure our flowers have brought. We feel more than paid when these letters come to us. Are not *all* these children, the givers and receivers, learning valuable lessons, and are not the delicate, dainty violets fulfilling their mission, too?



NUMBER WRITING,

BY GEORGIA THATCHER, POMO, CALIFORNIA.

IN the last number of *AMERICAN TEACHER* one signing herself "A Not Ingenious Teacher," asks for a plan by which to teach young pupils to write large numbers. The one in charge of the "Talks with Teachers" department does not favor the idea of teaching *young* pupils to write large numbers. My experience has been that it is easy to teach reading and writing of large numbers to *young* children. They are more interested, feeling they are doing something that is "like the big ones" when they are working with several figures. I have a plan which has worked admirably, my young pupils having learned to write large numbers in a very short time.

Below is the principal part of a recent lesson. Lines were drawn on the board, and the number, 826,234, 546,176, written thus:

Billions.	Millions.	Thousands.	Units.
826	234	546	176

I then told the class this story: A long while ago four men and their wives moved to the mountains, and built four houses all in a row. The man who occupied the first house was Mr. Units, the next house Mr. Thousands, the next Mr. Millions, and the man who lived in the last house was Mr. Billions. (Teach Trillions afterwards.) Mr. Units had a child, and its parents neglected naming it so long that the people on the mountains called it its father's name, "Units," as the boys call you "Carter," Henry. Mr. Units had another child; he named it "Tens," and his third child he called "Hundreds." These were all the children he had. Mr. Thousands, Mr. Millions, and Mr. Billions each had three children, and as Mr. Units was such a favorite with these people on the mountain, each man named his first child "Units," the next "Tens," and the next "Hundreds."

"How many men moved out to the mountain, Clara?"

"Four."

"How many children in each house, Leon?"

"Three."

"What were their names, Henry?"

Henry answers correctly.

"Why were they so named, John?"

THE New York City School Board has before it a resolution providing for a year's leave of absence for every ten years of service of each teacher, the year to be spent in the study of the schools of other states or countries. The teacher is to provide a substitute.

John recites what I have told him.

I then put the number 176,286,124 within the lines I have drawn. The class is told to read the figures in Mr. Millions' house as though they stood alone, only to put Mr. Millions' name at the end; the figures in "Thousands'" house the same way. They are told not to mention the name of "Units'" house.

Leon reads without hesitation, "One hundred seventy-six million, two hundred eighty-six thousand, one hundred twenty-four."

I next wrote within the lines 1,204,007, and told them the zero in "Thousands," house showed that was "Tens" place, but he was away, and that in "Units" house both "Tens" and "Hundreds" were absent.

Clara then reads, "One million two hundred four thousand and seven."

I have the children read a great many numbers before they commence writing; they then experience but little difficulty. After they have used lines or houses awhile, they are told the use of the comma.

Knowing this plan has made the work easier for my pupils, I hope those who have trouble in teaching large numbers will try it.

ILLUSTRATED COMPOSITIONS.

THE regular work in composition writing should occasionally include illustrated compositions. The illustrations may either be reproductions of pictures and diagrams illustrating the subject in hand or original drawings. Those given in this case are the latter, and are the work of a boy in the second class of the Dwight school, Boston. They form the head and tail pieces of an excellent resumé of the War of 1812.

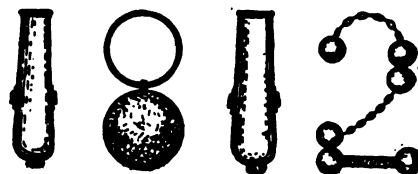
Some fear has been expressed that the scholars might neglect the literary side of the composition in their endeavor to obtain good results in drawing. This is not the case, for some of the best compositions, in every re-



spect, ever seen, as regards language, interest, research, not to speak of illustrations, have been done in this kind of work.

Such work should not be called for too frequently, and plenty of time should be allowed to prepare it. Help should also be given by the teacher in selecting

illustrations and choosing subjects. Pictures of simple outline, with the least possible detail, should be taken



and work done either with pen and ink or pencil. Try it; you will be surprised most agreeably at the results.

TALKS WITH YOUNG TEACHERS.

BY W. L. JAQUITH.

HOW TO MAKE SCHOOL A HAPPY PLACE.

A LEAF out of a child's history furnishes me with a vivid and painful memory. I remember once offering vain attempts at consolation to a boy who wept bitter tears as he started for school on the September morning which ended his first long vacation. His grief was very real. That he should be compelled to return to school was a dark tragedy for him. While making due allowance for a sensitive child's reluctance to leave a safe and happy home for the ordeals that await him in the schoolroom, it seemed to me then, and always has seemed, that all was not right in the schoolroom that had awakened this state of feeling. For a child to reach such a point of view thus early in his progress through a journey of schoolrooms, is, without question, unfortunate. It is the permanence of early impressions that makes the work of the primary teacher especially responsible,—sacred, I had almost said; and perhaps it is not too strong a word.

The perception of this fact has so filled the thought of educators, that improvement in this grade during the last few years has been wonderful, simply justifying the remark sometimes heard, that the best teaching to-day is in the lower grades. The enthusiastic teacher, however, so far from finding this fact a release from further attempts at improvement, will feel it an additional incentive to be

"Without halting, without rest,
Lifting better up to best."

A great writer on ethics tells us that happiness distinctly elevates the mental and physical tone; that pain of any sort has a depressing effect, and lowers the vitality. Let us take this great scientific truth, and see what it means, read in the light that streams through schoolroom windows. If it means anything, it means that no word or smile of yours that carries to one little heart the gracious message of your sympathy, no brightness that you can show from pictured walls or blossoming windows, is lost. Everything that makes one child the happier is worth while. Very quiet rooms, full of very patient children, may be seen where no happiness is; but there never yet was good, enthusiastic work in a schoolroom without brightness.

The beautiful schoolroom must surely contain children who have learned the habit of personal neatness. If necessary, the teacher must help here. In one of the most admirable schoolrooms I ever saw, the teacher had a habit which worked wonders. Immediately after devotional exercises were over, she passed down the aisle and looked at the hands laid down for inspection. It was a room full of poor boys, of a wide range of nationalities, but a lady need not have blushed for such hands as they showed.

A boy has laid a good foundation for gentlemanly manners when he has learned to be conscientious in the matter of hands, hair, and boots. It is but a step farther to teach orderly surroundings. Neat desks and floors are surely indispensable in the beautiful schoolroom. Both for beauty's sake and for honesty's sake, the children must learn to respect public property; to keep pencils and knives from desks and doors, and never to mark books that they do not own. It is astonishing how many adults needs this last lesson.

Neatness in the schoolroom and its inmates we must have; so much is a matter of necessity. The matter of decoration rests with the teachers, many of whom need no hint of the possibilities in this direction. Yet many a schoolroom might be made a more attractive place with very slight effort. True, salaries are not elastic, and they have to meet many inexorable demands. But heliotypes in wood frames are not expensive, and when we think of it why should not some of our favorite pictures hang where so many of our working hours are passed, even if the living room is a little the barer in consequence? Perhaps if we succeeded in bringing refining influences more directly to bear upon our tasks,

they would seem less like drudgery. Not to build a rich outer temple of enjoyment, for which we eagerly leave our work, but to transform the work-room itself into such a temple, is the true philosophy.

All these adornments, and many more, are good; but better, a hundred times, is the living beauty that reigns in some happy schoolrooms, the fadeless beauty of a loving heart. Happy is the child who need dread no rude repulse, whose delicate instincts of affection are withered by no harsh sternness, no cruel sarcasm; who can feel even in the hour of punishment that it is right, "because the teacher does it"; who sees in that teacher no enemy, but a faithful friend; and carries through the long years loving memories and undiminished loyalty.

Let us often remind ourselves what a blessed privilege is that of giving happiness. Let us take home to ourselves those beautiful words of Ruskin, "Be sure that the room is a pleasanter place for your being in it."

A COLOR LESSON.

BY A MEMBER OF THE LYNN TRAINING SCHOOL.

WISHING to give a lesson on color, our teacher one day hung several glass prisms in the windows of the "Sunshine Room." When the children came into the room for their regular recess exercise, the solar spectrum on the floor at once attracted the attention of all. They attempted to catch the "rainbow birds," as one of the pupils named them, and were much amused at seeing how, when one placed his foot on them, the colors appeared on his boot.

After vain efforts had been thus made, the children were directed to sit down on the floor and tell everything they could about the pretty colors. One child discovered the colors red, yellow, purple; another said she saw garnet, blue, yellow, and red. One bright little fellow discovered that "it moved," owing doubtless to the motion of the prisms. Still another remarked, "I see the color of the moon in it." We had some time previous drawn on the blackboard a picture of the moon with yellow chalk, and Chester had found the same yellow among the prismatic colors. At last all were quiet, intently watching, when up piped the irrepressible, "It looks like the stars." Questioning developed the idea that the colors twinkled and shone, and so came his idea of similarity to the stars.

The worsted balls were next produced, and a certain child chosen to find the ball whose color was like the one he liked best in the spectrum. The red ball was immediately held before all the children. A handful of pegs was next given to each child, and all were directed to pick out the red ones.

After all the red pegs had been found, another child was told to find the ball he liked best. The yellow ball

was selected, and the children allowed to find pegs of the same color. In this way the remaining colors,—orange, green, blue, and violet,—were considered.

We did not attempt to teach the names, but simply to have the children recognize and match the different colors.

Thus we found we had not a single color-blind child.

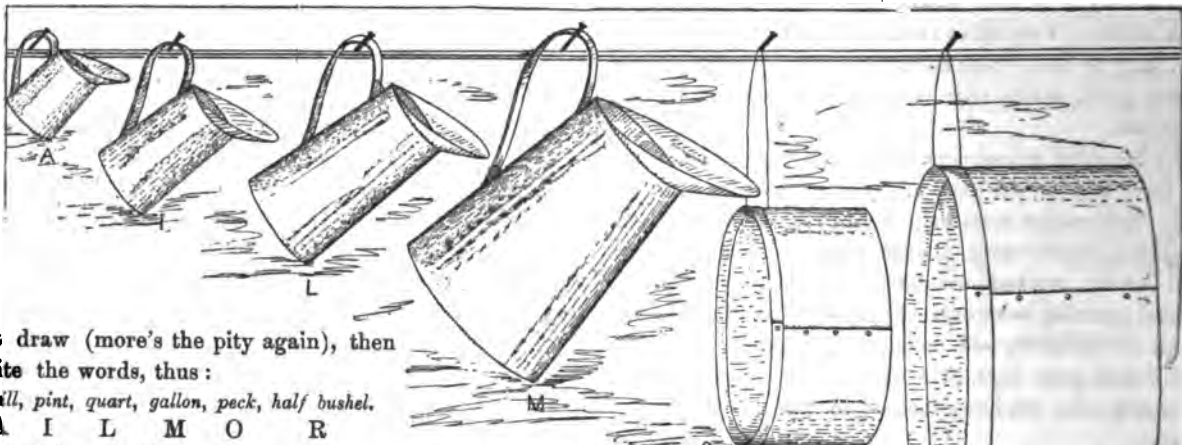
Besides the recognition of color gained in this lesson, attention was secured and easily held; observation, comparison, language, finger skill, and a sense of the beautiful were called into action.

SOMETHING MORE IN PERCENTAGE.

BY WM. M. GIFFIN, COOK CO. NORMAL SCHOOL.

AFTER taking the exercise, as given in my last paper, test the pupils with questions like those here given. Notice they not only test their knowledge of percentage, but also are a review of the tables in denominate numbers. Hang, one after the other, on the top edge of the blackboard a gill, pint, quart, gallon, peck, and half bushel. Under each put a number or letter, thus:

If you have not the real "live" measures (more's the pity), then draw them on the blackboard. If you can-



not draw (more's the pity again), then write the words, thus:

gill, pint, quart, gallon, peck, half bushel.

A I L M O R

Question as follows:

A equals what per cent. of I?

I equals what per cent. of L? (50%.)

L equals what per cent. of M? (25%.)

M equals what per cent. of O? (60%.)

O equals what per cent. of R? (25%.)

A equals what per cent. of L? (12½%.)

A equals what per cent. of half of M? (6¼%.)

I equals what per cent. of L? (50%.)

I equals what per cent. of M? (12½%.)

I equals what per cent. of O? (6¼%.)

And hundreds of other questions.

Next hang up an inch, foot, yard, and rod stick; also a string one chain long; then an ounce and pound.

Notice the letters used are unlike in sound, which helps wonderfully; e. g., are M and N used, the pupils are constantly asking, "Did you say M or N?"

Let me mention here a little exercise I had the other day. I sent a boy over to the tin shop, and had a pan made 11 inches long, 7 inches wide, and 3 inches deep. It holds just 231 cubic inches. This the pupils found out. I then held up a gallon measure. They told me what it was. I told them it was full of water. I then

began to pour the water into the pan. As the measure emptied the pan filled till every drop was out of the measure and the pan was "brim full." When asked what they had discovered, the children said, *on paper*, "There are 231 cubic inches in a gallon." The pan does not cost much, and if kept clean may, in after years, be used to *bake bread puddings in!* No excuse, then, for not getting one right away.

Follow the percentage exercises with problems. Not the next lesson, and it may be not the next ten lessons. You must judge yourself when the class is ready for them.

Smith & Co. bought a bill of goods amounting to \$50, on which they received a discount of 20 per cent. and 10 off for cash. What was the cash value of the bill? \$36 *ans.*

Dell & Co. buy a set of Dickens for \$12. They desire to sell them so as to make 33½ per cent., after discounting 20 per cent. from the marked price. That they may do this, what must be the marked price? \$20 *ans.*

A furniture dealer sold a bedroom set for \$70, and made a profit of 16½ per cent. by doing so. What per cent. would he have made had he sold it for \$72. 20 per cent. *ans.*

I send my agent, including his commission of 2½ per cent., \$820 to buy apples at \$4 per barrel. How many barrels can he buy for me after taking his commission? 200 *ans.*

After retaining 2½ per cent. for selling my potatoes, my agent sends me \$780. How much did he get for the potatoes? \$800 *ans.*

The child must be trained to appreciate facts by themselves.

CRYSTAL HUNTING.

BY MARY L. SAWYER, BOXFORD, MASS.

MOST minerals occur in two forms,—massive and crystallized, the first being by far the most common. In quartz, for instance, you will find whole ledges of quartz rock, while the flawless crystal may elude your closest search.

But this month we will go crystal hunting. The first thing to learn is a crystal's home, so that we may not waste our time looking for garnets in gypsum or for beryls in trap. The rock in which crystals are found is called the gangue or matrix, and the richest gangue for ordinary crystal hunters is mica schist. Packed snugly away in its glistening scales are tourmalines, garnets, kyanite, staurolite, and many other beauties. We, in Eastern Massachusetts, where crystals are few and far between, look with envy on the dwellers in mica schist regions who build their stone walls of rocks that would receive places of honor in our cabinets.

We can, however, find garnet sand and sanidin crystals at Marblehead Neck, green feldspar at Beverly and Rockport, galenite and chalcopyrite at Newburg, prehnite at Charlestown, and common tourmaline almost anywhere. We ought to find garnets, as they occur not only in mica schist, limestone, and sandstone, but in granite and gneiss. Their form is that of the dodecahedron (Fig. 1), and

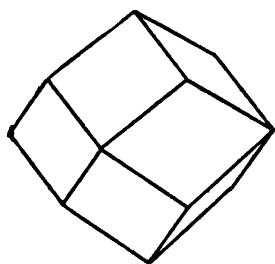


Fig. 1.

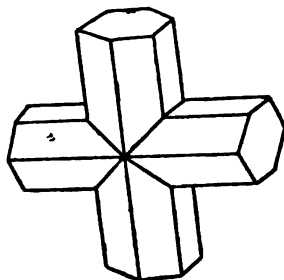


Fig. 2.

they are thickly scattered through the rock. Wine and cinnamon garnets of great beauty occur in gneiss and granite. In a sandstone region you can find them loose in the soil, freed by the crumbling of the soft rock.

Staurolite is another interesting mineral found in great profusion in mica schist. You will have no trouble in identifying it as it is almost always found in cross-shaped crystals (Fig. 2). Its color is a rich dark brown like that of many garnets and you will probably find garnets associated with it, tiny specimens being sometimes actually imbedded in the sides of the staurolite crystals.

In such a region be sure to look closely for the thin, blue blades of kyanite. It has a pearly luster and its shades run from white to a clear, exquisite blue. It will, perhaps, remind you a little of mica, but its long narrow, blades are not mica-like, and if you try to separate it into scales you will quickly see the difference.

Tourmaline, (Figs. 3, 4) in its common variety of black tourmaline we shall probably be able to find penetrating granite or gneiss rocks. We may have some difficulty in distinguishing it from hornblende, if the crystals are small and broken. Tourmaline crystals, however, are very brit-

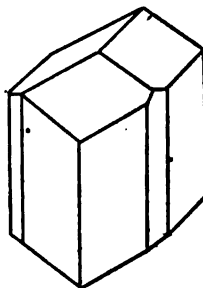


Fig. 3.

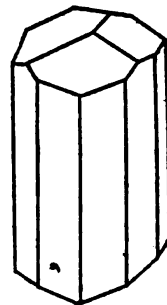


Fig. 4.

tle, while hornblende is tough and the luster of the broken surface is more resinous than tourmaline. If possible to see even a part of the side of a crystal look for tiny grooves along its surface, and if you find these striations, as they are called, you may be pretty sure your specimen is tourmaline. The crystals are often extremely slender, like long needles, and form a perfect network through the rock. The valuable red and green and yellow tourmalines, so much prized as gems, are not found imbedded but loose in the sandstone depths of rock pockets revealed by blasting.

It is worth while to break open a boulder occasionally when prospecting. Boulders are visitors, you know, and belonging, as they do, to regions many miles distant, they bring to our doors treasures we must otherwise travel far to find. Sometimes they contain crystals, but whether this is the case or not, they are exceedingly interesting in themselves.

Look, too, in your walks for the delicate rock tracery. Sometimes a smooth rock surface will be covered with the fairy foliage, but we shall hardly find more than a spray or two. You may hear it called fossil moss, but it is not a fossil and it is not moss, but a collection of crystals like the frost on a window pane. Such crystals are called dendrites, and are usually manganese or iron.

SUBJECTS FOR LETTERS.

[For children who can use only simple words,—i. e., children under ten years of age.]

Write Cousin Clara about your three pets.

Tell about your visit to a kindergarten.

Write a friend what five flowers that grew in your garden last summer you liked best, and why.

Write Uncle John about your plays out of school.

Write a vacation letter to your teacher from the mountains.

Write your brother in college how you would like to spend next Fourth of July.



BUSY WORK.

BY SARAH E. HARRINGTON.

DRAWING.—Cut simple forms from cardboard, as fans, leaves, butterflies, shoes, etc. Draw what is necessary, as buttons on shoes, veins on leaves, etc. Direct children to place the card on the slate and draw around it, adding the buttons, veins, etc.

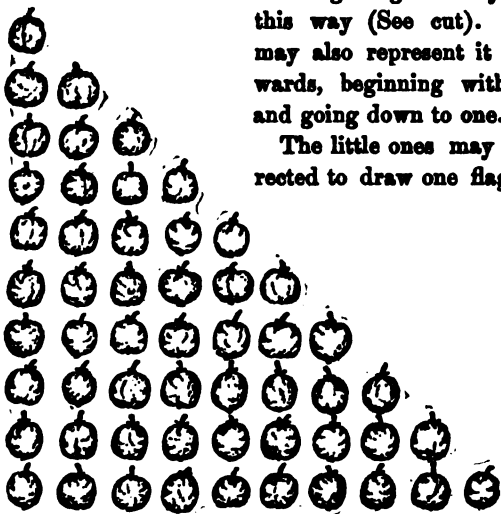
Cut, from cardboard, circles, squares, rectangles, and triangles, two sizes of each. Place in envelopes ready for distribution. The pupils are to draw around these, inventing figures by combining the various forms; as houses, wagons, etc.

Direct the pupils to draw a variety of figures, using only three straight lines, or only four.

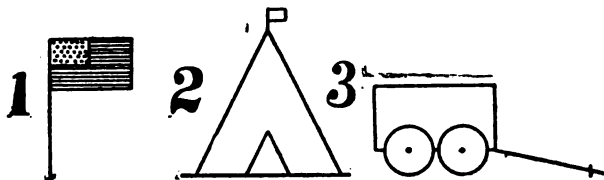
A class of little ones may be given wooden toothpicks to lay in the same manner.

NUMBER.—Have a little class represent counting by drawing a given object in this way (See cut). They may also represent it backwards, beginning with ten and going down to one.

The little ones may be directed to draw one flag, two

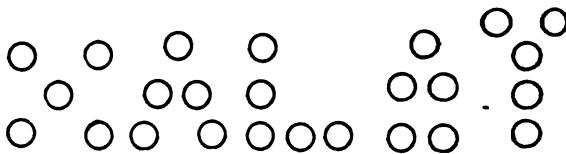


tents, three carts, four houses, etc. Place the lesson on the board in this way:—

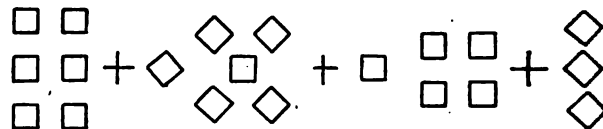


Give out five circles, or any desired number, cut from colored paper. Direct the class to arrange them in some design and draw the design on the slate; then arrange them in different designs, drawing afterward on the slate.

The slate work will be a record of what has been done. Sometimes have the colored paper pasted on cards in these same designs.



Place in envelopes squares cut from colored papers, and short sticks, as broken toothpicks. With these, have addition stories made, using sticks to make the signs.



Direct the class to write out all the sets of examples in a given number, as far as 8.

$1 + 7 = 8$	$2 + 6 = 8$	$3 + 5 = 8$	$4 + 4 = 8$
$7 + 1 = 8$	$6 + 2 = 8$	$4 + 4 = 8$	$8 - 4 = 4$
$8 - 1 = 7$	$8 - 2 = 6$	$8 - 3 = 5$	$2 \times 4 = 8$
$8 - 7 = 1$	$8 - 6 = 2$	$8 - 5 = 3$	$4 \times 2 = 8$
			$8 \div 2 = 4$
			$8 \div 4 = 2$

MAT PLAITING.

THERE is probably no "occupation" in the kindergarten work which gives opportunity for greater ingenuity of invention or forms a better groundwork for future skill in drawing than "mat plaiting or weaving." This work is usually confined to reproducing a series of mosaics, many of which might serve admirably for borders

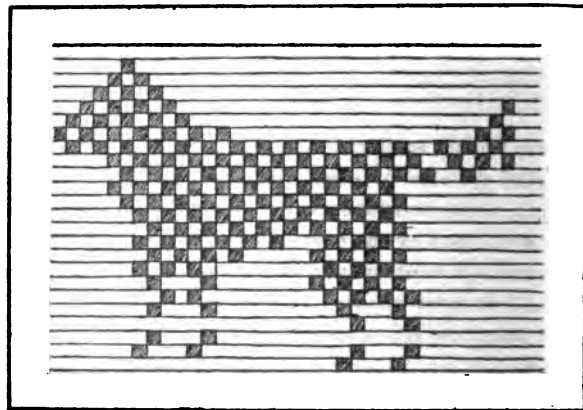


FIG. 1.

in tile work or for wall paper designs. Many of them are exceedingly intricate and beautiful, and no kindergarten work is so astonishing to the uninitiated. It seems impossible that the baby fingers could ever render such patterns, even under the careful guidance of the skilled teacher.

Miss Lucy Wheelock of the Chauncy Hall Kinder-

garten, Boston, has had her children depart somewhat, however, from the rule of always employing some regular pattern, and the results of her work are even more inter-

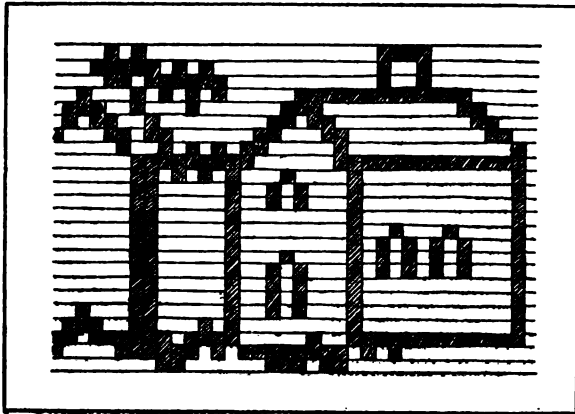


FIG. 2.

esting than usual. The weaving of objects is introduced, and a very creditable-looking dog is made. Fig. 1 gives a fair idea of the appearance of this animal, which is at least easily recognized. Fig. 2 shows a house and landscape, and Fig. 3 a pitcher. Other objects, as a lamp, a candle, a fly, etc., are also introduced, and the limit is

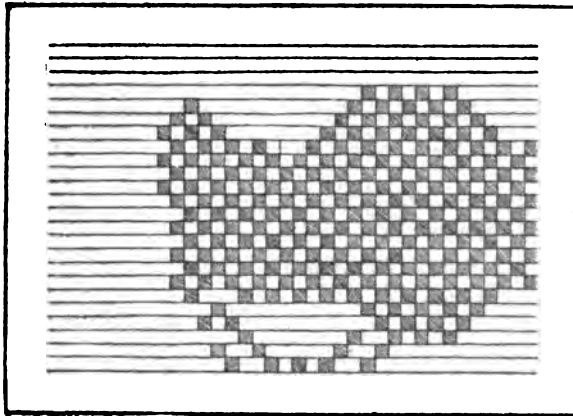


FIG. 3.

only reached when the ingenuity of the kindergartner in supplying models has been exhausted.

Mat weaving is well adapted for the first and second years of the primary school, and makes very interesting and instructive busy work. The introduction of objects increases its value tenfold as a basis for drawing, and should result in its greater use outside the regular kindergarten.

DRIFT FROM THE LYNN TRAINING SCHOOL.

[Arranged by Members.]

READING.

[There is nothing of greatness of invention claimed for the following scheme; it is simply offered with the hope that it may prove suggestive to teachers who are working in the same direction as the pupil-teachers whose needs in every-day work caused its origin.]

I. As drill upon the vocabulary developed, the following scheme has been used successfully. Write upon slips of paper various sentences containing known words; distribute the papers; write the sentences upon the board, and as each is written let the child holding that one read it.

II. Distribute the same papers; let each child read the sentence upon it; exchange, read again. In this exercise there should be no use of the blackboard.

III. Give pictures (from old books and papers) or objects; each child finds upon the blackboard the word standing for his object, or picture; by using colored chalk the interest will be heightened. Occasionally allow the class to show individuality through individual choice of the objects.

IV. This scheme, though similar to III., goes a little farther, and is valuable as a means of drill. Place the models, or pictures of the objects already considered, on a table. Put a word upon the board, and tell one of the children to find the thing which that word tells about. After the object has been found, and the child has told the blackboard story (word), write an adjective before it, and require the child to tell you what kind of an object it is, — *e. g.*, the object being *dog*, and a little one, too, the blackboard development would show “a little dog.”

V. Write sentences on small cards, using all the constructions developed; prepare a duplicate blackboard list; distribute cards; call upon some child to read from his card, and upon another to find the duplicate. Continue until the entire class has found and read sentences.

VI. Distribute the slips of Scheme I.; call upon any child to point out his “story” upon the board; individual or class reading may follow.

VII. Tell in a catchy way a bright story containing all the words known to the class, the children to supply the proper word as you pause in the story-telling to point it upon the board.

VIII. Make a rough sketch; ask the children to give the name of that of which it is a picture, and write the name when given. At another lesson erase the drawings and call for the words.

IX. Using the blackboard list, supply several pupils with splints, and as the teacher calls for a word, allow the children to “catch” it by touching it with the splint.

X. A child points out a word called for, and tells a little story containing it; or the child tells a story about the word he likes best, and a playmate crosses it from the board. Again, the teacher describes, and the children tell and find the word in the list, the child making a mistake goes to the “foot of the line.”

XI. Write known words all about the room, then “go a visiting,”—that is, let the class follow the teacher about the room, and upon returning to the starting place she asks some one what he saw while he was traveling. The children then trot away to touch that which they saw; or one may “turn the class into pigeons,” and through playing “pigeon house” develop a good review of words.



For the present Mr. Winship will conduct this Department. He will be pleased to receive questions upon school discipline, administration, methods of teaching, and will answer the same personally or secure answers from experts. Teachers will please write their names and addresses, not for publication, but that answers may be given by letter, if not of general interest. Will teachers ask questions with the pen as freely as with the voice?

87. *Kindly suggest some good methods for general exercises in mental arithmetic, or good helps for the use of a teacher.* M. F. H.

Will our readers who are teaching mental arithmetic send us suggestions on this subject. Much depends upon the age of the pupil and the advancement of the class. Every class, even through the high school and academy, should have practice in mental arithmetic at least once a week. This practice should be of three kinds; first, for accuracy and rapidity in the fundamental rules; second, for accuracy and rapidity in the use of business fractions,—that is, the fractional parts of 100; third, self-reliance and clear-headedness in the solution of simple problems. Under the first head I should base all the examples in addition upon the famous Walton chart, which makes pupils both accurate and rapid. The only added advice I would give is to use the different combinations very much oftener than he does,—such as those with 7, 8, and possibly 4 and 6. Nineteen-twentieths of all the mistakes in addition probably occur with these four numbers; nine tenths with the first two. Under the head of business arithmetic, with young children, use $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{5}$ of 100,—that is, talk of 50, 25, and 20 per cent. of a number, and familiarize them very early with variations in the use of these fractions. With pupils at nine and ten years of age, use freely $\frac{2}{3}$, $\frac{3}{4}$, $\frac{1}{2}$, $\frac{3}{5}$, $\frac{1}{3}$, $\frac{1}{4}$, and $\frac{1}{5}$, or 75, 40, 60, 80, 33 $\frac{1}{3}$, 16 $\frac{2}{3}$, and 12 $\frac{1}{2}$ per cent. In the upper grammar grades use $\frac{3}{4}$ (66 $\frac{2}{3}$ per cent.), $\frac{2}{3}$ (83 $\frac{1}{3}$), $\frac{3}{5}$ (37 $\frac{1}{2}$), $\frac{2}{5}$ (62 $\frac{1}{2}$), $\frac{1}{3}$ (87 $\frac{1}{3}$), $\frac{1}{4}$ (8 $\frac{1}{4}$), $\frac{1}{5}$ (6 $\frac{1}{5}$). In the high school use $\frac{1}{2}$ (41 $\frac{1}{2}$), $\frac{1}{3}$ (58 $\frac{1}{3}$), $\frac{1}{4}$ (91 $\frac{1}{4}$), $\frac{1}{5}$ (18 $\frac{1}{5}$), $\frac{1}{6}$ (31 $\frac{1}{6}$), $\frac{1}{7}$ (43 $\frac{1}{7}$), $\frac{1}{8}$ (56 $\frac{1}{8}$), $\frac{1}{9}$ (68 $\frac{1}{9}$), $\frac{1}{10}$ (81 $\frac{1}{10}$), $\frac{1}{11}$ (93 $\frac{1}{11}$).

Let each one of the pupils in the respective grade indicated have an abundance of practice upon classes of examples like the following, being careful, of course, to use the class adapted to the grade:

1. What per cent. of 12 is 3? Of 35 is 7? Of 24 is 6? Of 42 is 21? Of 75 is 45? Of 6 is 4 $\frac{1}{2}$? Of 64 is 40? Of 96 is 36?

2. If 25 is 5 per cent., what is the whole? 6 per cent.? 40 per cent.? 12 $\frac{1}{2}$ per cent.?

3. What is 33 $\frac{1}{3}$ per cent. of 660? 66 $\frac{2}{3}$ per cent. of 300? 40 per cent. of 550? 16 $\frac{2}{3}$ per cent. of 600?

4. What per cent. of 12 is 3? Of 16 is 8? Of 20 is 15? Of 15 is 5? Of 9 is 6? Of 24 is 4? etc.

5. 25 is 50 per cent. of what number? 9 is 75 per cent.? 7 is 33 $\frac{1}{3}$ per cent.? 18 is 66 $\frac{2}{3}$ per cent.? 7 is 12 $\frac{1}{2}$ per cent.? 12 is 8 $\frac{1}{3}$ per cent.?

6. What is 33 $\frac{1}{3}$ per cent. of 2,481? 40 per cent. of 4,535? 83 $\frac{1}{3}$ per cent. of 60? 37 $\frac{1}{2}$ per cent. of 248? 41 $\frac{1}{3}$ per cent. of 72? 18 $\frac{1}{2}$ per cent. of 48?

7. What per cent. of 12 is 3? Of 9 is 6? Of 60 is 50? Of 8,000 is 5,000? Of 160 is 140? Of 48 is 44? Of 32 is 14?

8. 7 is 75 per cent. of what number? 12 is 37 $\frac{1}{2}$? 50 is 41 $\frac{1}{3}$? 27 is 56 $\frac{1}{3}$? 45 is 93 $\frac{1}{3}$?

9. What is the selling price if the cost is \$30 and gain 20 per cent.? Cost \$200, loss 75 per cent.? Cost \$333, gain 33 $\frac{1}{3}$ per cent.? Cost \$60, loss 83 $\frac{1}{3}$ per cent.? Cost \$80, gain 62 $\frac{1}{2}$ per cent.? Cost 60, gain 58 $\frac{1}{3}$ per cent.? Cost 48, loss 41 $\frac{1}{3}$ per cent.?

10. What is the cost if we sell 20 per cent. in advance and get \$24? 25 per cent. loss and get \$12? 33 $\frac{1}{3}$ per loss and get \$42? 31 $\frac{1}{2}$ per cent. loss and get \$36?

11. What is the gain per cent. if the goods cost \$40 and you sell them for \$48? If cost is \$32 and sell for 36? If cost is \$64 and sell for \$68? If cost is \$36 and sell for \$51?

12. What is the number if 6 $\frac{1}{2}$ per cent. + 12 $\frac{1}{2}$ per cent. + 25 per cent. + 37 $\frac{1}{2}$ per cent. = 39? If 8 $\frac{1}{2}$ per cent. + 16 $\frac{2}{3}$ + 41 $\frac{1}{3}$ = 96? If 6 $\frac{1}{2}$ per cent. + 18 $\frac{1}{2}$ + 31 $\frac{1}{2}$ = 90?

13. What per cent. of the whole is each if there are 8 parts of A, 12 of B, 4 of C? If 3 parts of A, 5 of B, 7 of C, 1 of D?

88. *What would you recommend to a teacher who knows she is weak in discipline?* M.

Orcutt's *School Keeping* (New England Publishing Company, Boston,) is one of the most sensible books of suggestions on discipline. Page's *Theory and Practice of Teaching* is full of good sense. Currie's *Common School Education* (Willard Small, Boston,) is a valuable book; and you will also find John Swett's *Methods of Teaching* (Harper & Bros., New York,) most helpful.

89. *Will you kindly give me a plan for conducting "general exercises." I am inexperienced, and find it extremely difficult to hold the children to the subject in hand.* L. A. S.

There is no necessity for having general exercises, and I should only have them when certain that they would be helpful, and when I could handle them without great difficulty. The principle involved in the successful general exercise is the holding of attention, the awakening of thought, the development of permanent interest. A girl of ten years recently said, "I like physiology better than my other studies, because we don't have to review it and dwell upon it so long." A little talk developed two things; it was taught as a general exercise, and she knew very little about it. General exercises, to hold the

attention, must be brief, clear, and interesting. To be interesting, they must be fresh, suggestive, full of surprises. To be of value, they must be clearly outlined, the impression vividly made, and the leading points sharply and frequently reviewed.

90. *Please tell which is the correct method of teaching oral spelling to young children, where two letters of the same name come together, as in "book." Shall I have them repeat the name of the letter, as b-o-o-k, or shall I have them call the two letters "double o"? Does the mere fact that two similar letters come together make them "double"? I have been using the former method, but have been told it is not according to Webster. I hold that Webster's Dictionary is not a book of methods on teaching, and has nothing to do with the case. Do you not think as pupils become old enough to be taught the rules for spelling, that they readily see that the "double l," referred to in the rule, is the same as in naming it l-l in their former spelling lessons?*

PRIMARY TEACHER.

There is no principle of teaching involved in this,—it is merely a convenience of naming. Since the parents, the committee, and the public generally were taught to say double o and double l, the presumption is that it is better to so teach; but if, as a matter of fact, your pupils learn to spell "book" more easily by saying b o o k, let them do so by all means. The fact that double letters always come in the same syllable, and are always pronounced as if but one, makes it natural to group them, or double them. Of course Webster is not authority on methods,—indeed, in his day, the o o was never dreamed of. The chances are that the o o is not a reform that will be abiding. If the committee or any one else in authority or influence prefers it, use the o o by all means.

91. *I have an ungraded school of eighty-five pupils. They are from chart to fourth reader. I average seventy in attendance. Now of course I do not expect to have a quiet school, but how quiet should I try to have it, and how secure reasonably good order without so often telling the children to study a little more quietly? I try not to scold them. My school was bad when I came. They tell me it is far better than heretofore. My schoolroom is small; would comfortably seat forty.*

B.

This a difficult question, and is practically unanswerable. One has no moral right to teach eighty-five pupils, or an average of seventy, in a room that was made for forty; but you are not responsible for the state of affairs; it is your misfortune, not your fault. No person can do what you aim to do unless she has the elements of a great teacher. All I can say is, "Do the best you can, and try for a smaller school." There are, of course, a few hints to be thrown out:

If the scholars, as a whole, desire to please you, that will help them to be quiet. I should seldom speak about their being quiet, but whenever they were noisy I should have some slight signal, like the tap of my pencil on the desk, or the striking of a bell, which would be understood

to mean absolute quiet. At first there will be a few who are not quiet, but these will soon see they are attracting attention and become so. Possibly some one, or a group of two or three, may attempt to defy you and the school, but that will last but a moment if you have the courage to be absolutely silent and watchful. As soon as the room is still resume the exercises, without remark. Too much talk is the bane of many schoolrooms. A noisy teacher, a scolding teacher, a talking-all-the-time teacher never has quiet in the schoolroom.

92. *Why is "sun" in the masculine gender and "moon" in the feminine gender? What gender is "star" or "stars"?*

H. E. M., New Berry, Pa.

Primarily because of the majesty and power of the sun, and the tenderness and delicacy of the moon.

The stars are neuter gender. Sometimes a special star is spoken of as feminine.

PUBLISHERS' ANNOUNCEMENTS.

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THE AMERICAN TEACHER.

A. E. WINSHIP,
W. E. SHELTON, } Editors.

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SLEEP early and long.

ORDER you must have.

NEVER,—no, never grumble.

DATE-TEACHING is old fashioned.

WHISPERING must not be allowed.

BE careful not to say "don't" too often.

LIVE within your means. Financial worry is the worst of all.

BE not impatient with the incessant inquisitiveness of children.

BE prompt in everything. Open and close the school on the minute.

DO not stand all the time and do not sit much of the time in school.

NEVER get within arm's length of a pupil in recitation. Keep your distance.

DO not let children make a nervous draft upon you these debilitating days.

TRUE teaching power is that which holds a class to its work without being too near it.

THESE are the days in which teachers break down. **LET** up on the school-room strain.

NEVER question a class by any rule from which a child can know when he is or is not to be called to recite.

TENNESSEE has passed a law providing that no man shall be a school director who cannot read and write. Next!

It is now said that nine-tenths of all the women who teach schools in cities and large towns marry. We have never seen the detailed statistics, but experts say that it is so.

A. C. STOCKIN of Boston, and Elias Brookings of Springfield, will jointly conduct one of the Henry Gaze

& Son's European Excursion Parties this summer. It will be a delightful trip, at light expense, under the best of directors.

EMPEROR WILLIAM of Germany declares that in the higher classes the number of pupils afflicted with myopia is sometimes as high as 75 per cent.; that too many people in Germany are over-educated; that the schools swell the ranks of "reformers and other dangerous classes."

SYMPATHETIC social life is being more and more appreciated as one of the pressing needs of the woman teacher. Teachers should help each other to it. Each should do what she can to secure it for herself. It is to be had in every community but not every one can secure it.

THERE should be a thermometer in your schoolroom and it should hang at about the height of the heads of the pupils when standing. It should hang upon wood rather than plaster, and not too near the heater. It should be looked at frequently and a record kept of the temperature at least once an hour during school time.

LIZZIE DUNBAR, a 16-year old teacher at Darien, Wis., has been presented with a diamond ring by the admiring citizens of the town, for having severely punished an overgrown boy, who tried to make life a burden to her, threatening to break up the school. There is evidently a corporal punishment sentiment in some localities.

THE women teachers have special need of restfulness in their homes. It is well-nigh impossible for her to find the comfortable surroundings she needs in a boarding place. People as a rule take boarders to make money, and people with abundance of good room are not willing to take a teacher for what she can afford to pay. The teacher needs great patience and much tact to make her home life restful.

THE teachers of Scotland are discussing the question as to the amount of salary on which it is possible or proper for a man teacher to marry. Quite an effort is being made to fix \$600 as the minimum; but a consensus of opinion seems to have established \$400 as the proper limit. Our educational friends in England and Scotland are often discussing questions to which American educators have given no public attention.

THE Journal of Education will, for seven weeks from May 7, devote considerable space to the answers in the Book-a Month Course of the past year. The work done by those who have taken the course has been very fine, and from these papers will be collected many excellent things for printing. There is not space in the **AMERICAN TEACHER** to present these, but the **JOURNAL** will be sent for those seven weeks to any one who will send us twenty-five cents. These will be of great value and interest to those who have not taken the course as well as to those who have.

THERE is a proposition to have a new paper in America to be styled the "Record of Virtue" which is to offset the disproportionate attention given to crime in the ordinary daily paper. "The Police Gazette and papers of that class are the private reading of criminals. Lewd novels and sensational story papers lead boys and young men to the reform school or to prison," says an exchange. "Why should not heroism be cultivated and imitated as well as crime? An engineer who stands by his engine in the face of almost certain death in order to save the train load of passengers, is a better figure to hold up to the gaze of youth than the highwayman who enters the train and single-handed robs all the passengers."

THE LOWEST SALARY \$750. — In New York City there are 359 women who have taught fourteen consecutive years who are now receiving less than \$750. The school board has decided that it is unjust to the teachers and a disgrace to the city to allow this to continue, and 312 of them will be given at least \$750 after January next. This will cost the city but \$27,792. There are 47 teachers who have taught the fourteen years whom the board has not seen fit to put on the minimum salary list for various reasons. There are also fourteen teachers who have taught fourteen years, not consecutively, who will be placed upon this list at an expense of \$1,533. New York City will therefore pay \$30,000 a year from this time onward, for justice and honor. It is a good investment.

BOOK-A-MONTH COURSE.

Education: Intellectual, Moral, and Physical. By Herbert Spencer. New York: D. Appleton & Co. Price, \$1.25.

Herbert Spencer is an unfortunate author for any one to read who has the bent of mind or has acquired the habit of accepting as a master whomsoever he reads in philosophy, science, or art. It is exceedingly difficult to read Mr. Spencer and not be his disciple. He has the vigor of thought, the fascination of expression, and leaves the genuine good sense impression, which conspire to win and to command at the same time. He is, however, a most unfortunate master, while he is the best of counselors. His wealth of illustrative material and his use of every-day incidents and events remind one, if it may be said reverently, of much of the New Testament writings. In this regard he may almost be said to give us a gospel of education. He carries a head-light in his style that illumines the way far ahead of what he says. In this peculiarity he constantly suggests Horace Bushnell in the religious world. Mr. Spencer will inspire more good thinking than any other philosophical writer of this age, probably, but he will leave little more that can be traced to him than did Emerson.

With this in mind we commend this volume most

heartily. Read it carefully, read it ardently, but *do your own thinking.*

QUESTIONS.

1. Name ways in which your teaching tends to make the pupils wield an influence over others as men and women.
2. In what ways does your teaching tend to make pupils take better care of their health?
3. In what ways does your teaching tend to make your pupils earn a living easier?
4. Will your teaching tend to make pupils in after-life get better return for their effort?
5. Will your teaching tend to give pupils more comfort, more luxuries, greater peace of mind?
6. Do you have in mind as you teach, the importance of balancing the profit, influences, comfort that pupils will secure from your effort?
7. What things that you teach are of intrinsic value?
8. What of conventional value?
9. Name several uses of physiology.
10. Of what value are the mechanical sciences?
11. What kind of history teaching is valueless?
12. What is valuable?
13. Of what use is æsthetic culture?
14. What studies are of most value for discipline?
15. Of what special value is the distinctively oral element in teaching?
16. Of what value is the habit of gaining knowledge from books?
17. Specify ways of training the senses.
18. Of training the sympathies.
19. Is there danger of overstudy in school?
20. How can it be prevented without going to the extreme of understudy?

THE SUMMER SCHOOLS.

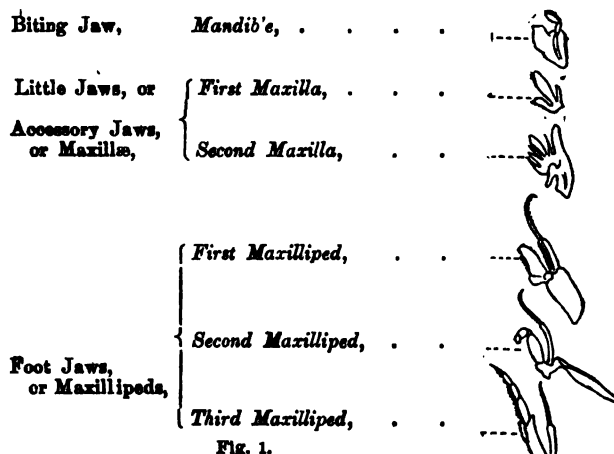
The summer school is here to stay. They are larger, better, more scholarly and professional each year. This season they are simply wonderful. We do not understand how it is possible to give such variety and abundance of talent, in such charming places, with such surroundings and companionships, at such a price. Literally the best professional talent and the best scholarship in America,—almost the whole of it,—are to be found at these resorts, and the average teacher at the expense of a pleasure vacation, can combine the most restful rest, the most pleasurable pleasure, the most companionable companions, the most inspiring inspiration. Through the survival of the fittest, men have been developed who are geniuses in the art of summer school management. They have the instinct of success in catering to the tastes and needs of teachers socially, scholastically, and professionally. Now let the coming season show as great professional devotion as it will show elaborate preparation for the profit, comfort, and luxury of teachers.

LESSONS IN ZOOLOGY.*

BY OLARABEL GILMAN, JAMAICA PLAIN, MASS.

The Lobster. — (II.)

In order to give the class a correct idea of all the appendages, we make blackboard sketches of the mouth-parts (Fig. 1), and also sew the mouth-parts, the antennæ, and the eyestalks to a piece of dark-colored pasteboard.



Review of Lesson I.—The lobster is dark green, with reddish claws. It is tubular in shape. Its skeleton is a hard crust. The body is in two parts, — the head-thorax and the abdomen. The head-thorax is covered by a great shield called the carapace. The lobster has many pairs of jointed appendages. The abdomen has six rings and a flat telson. There are six pairs of swimmerets on the abdomen. With the small swimmerets the lobster carries its eggs; with the pair of large swimmerets and the telson it takes long jumps backward.

Outline of new work. — We will count the appendages of the head-thorax. There are five pairs of legs (Fig. 2, c^1 — c^5), and one pair end in great claws. There are two pairs of little legs. There are "lots of little legs and things" next to the big claws.

All these little legs can be seen fastened to this piece of pasteboard. How many pairs are there?

There are two pairs of little legs. There are three pairs that are split, and look something like swimmerets. There are two great teeth, with a pair of tiny legs fastened to them.

The three pairs next the great claws are the jaw-feet, called also foot-jaws or maxillipeds. The next two pairs are little jaws or maxillæ, and the "two great teeth" are the pair of mandibles or chewing jaws. Let us put our probes between the mandibles into the mouth. These six pairs of appendages are called mouth-parts. What other appendages has the lobster?

He has two pairs of feelers. Those are his antennæ. What is curious about his eyes?

They stick out from his head, and can be moved about.

The eyestalks are another pair of appendages. How many pairs of appendages are there on the head-thorax?

There are fourteen pairs.

How many pairs on the abdomen?

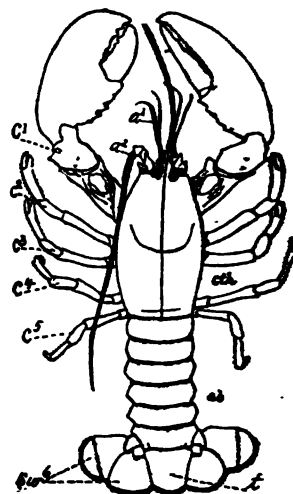
There are six pairs.

Now we will compare the legs. How many joints have they?

The big legs have six joints and the others have seven.

The joints move in different ways. The first pair of legs end in large claws, the next two pairs in small claws, and the last two pairs in sharp points. One great claw has broad, blunt teeth, the other has sharp teeth.

Since the lobster lives in shallow water, he uses his four pairs of small legs in walking over the rocky bottom. The great claws are kept for fighting and tearing his prey. If he loses one in a duel, another soon takes its place. While the broad teeth on one claw



often anchor the lobster to some large seaweed, or are used as millstones for crushing his food, the other claw catches fish and tears them apart with its sharp teeth.

While the great claws capture moving prey, the third pair of jaw-feet pick up food from the bottom, and their saw-like inner edges help to tear it in pieces. The other mouth-parts, especially the strong mandibles, do the rest of the work of biting and chewing, though the little jaws seem too soft to be of much use.

We notice that the first pair of antennæ (Fig. 2, a^1) are very short and have two parts, but the second pair (a^2) are very long and made of many little joints.

The ears are in the lower joint of the small antennæ, which is flattened on the upper side and surrounded by hairs. If these are pushed apart, a small, clear, oval space is seen, which is the outer covering of the ear.

Pupils who think a lobster needs eyes in the back of his head, since he takes his flying leaps backwards, see how this need is met by the movable eyestalks, which enable him to turn his eyes in any direction.

THE MARTHA'S VINEYARD SUMMER INSTITUTE has an admirable location. It is on an island with sea breezes and good bathing. This institution is an honor to the old Bay State. Last year its numbers reached seven hundred from all parts of the country. The management, under the leadership of, William A. Mowry, the president, have this year introduced several new features. The *Swedish Sloyd* will be taught by Mr. Everett Schwartz, lately instructor in Col. Parker's Normal School, Chicago. The *Swedish Gymnastics* are under the direction of Baron Nils Porse. Dr. E. E. White lectures on Pedagogy. Dr. C. W. Emerson has the school of oratory and elocution. Methods, both elementary and high school, languages, mathematics, sciences, literature, etc., are embraced in the various courses. Great improvements of buildings and grounds will be apparent this year. The directors have expended over \$8000 within the past year in permanent improvements. See their advertisement in this number.



[The teacher will find it pleasant, as a variety, to silently read the stories, or selections, then repeat in her own language before the class, which in turn reproduces, orally or in writing.]

REPRODUCTION EXERCISES.

BY M. E. C.

BIRDS THAT SEW.

[Adapted.]

[To be read, or repeated, to children of the first and second primary grades. The reproduction should be oral with one grade and written with the other.]

In a country a long, long way from here there live some tiny yellow birds about as big as your papa's thumb. The people of that country call these tiny birds tailor-birds because they can sew. Monkeys and snakes live in this place too, and they like to eat the yellow birds; but the little birds are very wise and build their nests where they cannot be seen by the hungry monkeys. They find a dead leaf and fly with it into a high tree, and with a fibre for a thread, and their bills for needles, sew the leaf on to a green one hanging from the tree. They sew up the sides and leave the top open, then line it with soft feathers and down. It makes a nice cosy home for the little birds, and the frisky monkeys never know the nest is there swinging in the breeze with the mamma-bird sitting on two wee white eggs and papa-bird singing to her all the while from a branch quite near. Some day two baby yellow birds will fly away with their mamma and papa, the leaf nest will blow down, and no one will know about the nest and the wise birds but you and me.

THE DOG THAT WORRIED.

[Adapted.]

[To be used with lowest primary grade. It may be read, or repeated, and reproduced orally.]

"Yap! yap!" snapped Frisk in just the crossiest voice ever heard from a well-fed little dog.

"What's the matter, dear?" anxiously asked the mother dog in her queer dog-talk.

"That wasp bothers me so!"—yap! yap! yap!" snapped Frisk again.

"Why, my dear," said his mother with great anxiety, "has he stung you?"

"No," said Frisk crossly; "but he keeps coming near me—yap! yap!"—and he might bite me—yap! yap!"

"Oh! is that all?" said the mother dog. "Go back to your dinner, you foolish little puppy. While you have been fretting over what the wasp might do, that alv eat has eaten more than half your meat. I heard the mistress telling Tom this morning that it's a good rule to never trouble trouble, till trouble troubles you. I think it's quite as good a rule for little dogs as for little boys."

A GOOD DAY.

[Adapted.]

[To be read to first and second primary grades and reproduced orally.]

Bobby was sitting in papa's great chair. There was a pillow behind him, and his toys lay all around. It was growing dark; soon

Nurse would come to put him to bed. Mamma came in and taking him in her arms sat down in the big chair. "What has my little boy done to-day?" she asked. Bobby did not answer. He had such a short little memory that he could not tell about the morning. He only remembered how he had been playing with his train of cars and that Nurse had given him a tiny sponge-cake with his bread and milk. At last he just cuddled down in mamma's soft arms and let her remember for him.

She remembered how he came running to her bedside early in the morning to wake her with sweet kisses; that he had not cried while being dressed, although Nurse pulled his hair in combing out the snarls, but had been patient because she had asked him to be good all day. She remembered, too, how he picked up all the buttons for her when she upset her button-box, and when he did not mind at once that soon he came to say he was sorry and ask to be forgiven. These were all pleasant things to remember, and mamma kissed the rosy, sleepy, little face pressed against her shoulder and felt very happy because her little boy had tried so hard to take good care of Bobby and help his mamma too.

SOMETHING ABOUT THE CHINESE.

[Adapted.]

[To be used in connection with the geography exercises. Read once to the class, which reproduces in letter form.]

Would you like to know something about the Chinese and their ways of doing at home in China? Well! to begin, if you ever wonder how a Chinaman would do anything, think first how you yourself would do it, and be very sure he would do the same thing in just the opposite way. When he reads he begins at the back of his book; instead of reading across the page from left to right he begins on the right side and reads from top to bottom. What we call foot-notes and put at the bottom of the page, he puts at the top, and the title of book or chapter and page he puts at the side instead of at the top.

A Chinaman always writes his family or surname, as we call it, before his other names; and the little boys in his family do not have nice names as you have. Until he goes to school the little boy is called by some such name as Ox, Dog, or Sheep. When he enters school he is given a name called his "book name," and to this when he leaves school another name is added by one of his friends. This name is apt to be rather a nice one and by it he is known to his intimate friends.

The Chinese do many things very differently from other people. A carter sits on the left side of his cart, and turns to the left in passing another cart; they never say "right and left," or "north and south," but the reverse. When a new building is being erected the carpenters bring great logs and saw them up near the site of the building, instead of buying boards at a mill. There are no saw-mills so of course the carpenters are forced to work in this way, which seems strange to us. The bricks which the Chinese use, are not beautiful and finely pressed, but rough, gray things that the workmen shave carefully with knives, and afterwards rub one against another until they are smooth. You could never guess how the mortar is carried; there are no hods like those used in America; instead, the Chinese hod-carrier uses a stout piece of canvas about a foot square with loops of rope at the corners. He puts a very small shovelful of mortar on the canvas, gathers up the loops in his hands, carries it to the foot of the scaffold, and throws it to some one on top. When the scaffolding gets to be more than two or three feet above a man's head, some one stands on a shelf at about that height to catch the mortar and pass it along. Buildings are not nearly as high in China as in our country, so this slow way of working answers very well. The workmen rest a good many times during the day, for they have two meals of rice to eat and must stop several times besides to drink tea.



'TWAS YOU.

BY LAURA F. ARMITAGE.

"SOME one's been at my cake," said Aunt Jane;
 "There are mice in the house, it is plain,—
 For I'm sure that our dear little Guy
 Wouldn't go and take cake on the sly."
 Guy's face looked just then very red;
 "Perhaps the cat took it," he said,—
 "For I saw her out back of the house,
 Eating something, and 'twasn't a mouse."
 And off he then ran to his play;
 But out in the pasture old Bay
 Shook her head at him, saying "Moo, moo!"
 But Guy thought she said, "'Twas you! you!"
 "I don't see how she knew it," he said;
 Then he ran to the barn; o'er his head
 The doves softly said, "Ooo, ooo, ooo!"
 But he thought they said, "You! 'twas you! you!"
 And from the hen-yard he was sure
 He heard the same story once more;
 'Twas the rooster's loud "Cock-a-doodle-doo,"
 But it sounded like "You! 'twas you! you!"
 In his bed Guy was lying awake,
 With a load on his breast, — was it cake?
 When an owl in the woods cried "To-whoo!"
 But Guy heard it say, "'Twas you! you!"
 Down the stairs quickly ran little Guy
 To Aunt Jane; "Oh!" he sobbed, "it was I,
 And not Kitty, who took your nice cake,
 And the thought of it keeps me awake."
 "And the cow, owl, and doves, they all knew,
 And the rooster, too, said "'Twas you! you!"
 If you'll only forgive me, Aunt Jane,
 I will not be so naughty again."

THE CHILDREN'S TREE.

BY J. C. P.

We have planted a tree this morning,
 A little one you see;
 But I know it will grow,
 Each year it will grow,
 Until it's a fine large tree.

We have planted it here on our playground;
 We will watch it morn and night,
 Till it sends its tender leaves so green
 Out to the warm sun-light.

Children lay flowers around tree.)

And now, little tree, you are ours;
 We have each helped place you here;
 And to pay us for our labor,
 Please grow a little this year.

When tall you have grown and stately,
 And are spreading your branches wide,
 We hope the pretty birds will come,
 Their nests and eggs to hide.

Good-bye, little tree, for this morning;
 We leave you without a sigh,
 For each day we will come and see you,—
 So good-bye, little tree, good-bye.

RHYMING LESSON IN CLAY.

BY LIZZIE M. HADLEY.

(Arrange the children in three rows. One child may stand in front of these, and ask questions.)

Pupil.— Children, what are you doing to-day?

Children.— We are making some curious things out of clay;
 And while we all work, we play, you must know;
 That each has a garden where pretty things grow.

[First Row.]

First Girl.— In mine these's an apple,—I'm sure it is sweet.

(Holds up sphere.)

Second G.— There's an orange in mine, that some day I shall eat.

Third G.— O, I have the funniest one of them all,—
 For, look! I am holding a candy ball.

All.— They are round, they are smooth. See each pretty
 curved face!

Now here on our desks, if we put them in place,
 We can make them stand still, or roll them this way,
 (All roll spheres.)

These queer little things we've been making to-day.

Pupil.— How do you make them?

Children.— O, watch us at play;
 We each take a piece of the soft, moistened clay;
 We roll it and roll it, now this way, now that;
 Give this side a pinch, and that one a pat;
 Roll again, and then in a twinkling, my dear,
 We are each of us holding a pretty clay sphere.

(All hold up spheres.)

[Second Row.]

Children.— No fruit you will find in these gardens of ours,
 But we're all making boxes, in which we'll plant
 flowers.

First Child.— Mine shall hold asters.

Second G.— And mine mignonette.

Third C.— And in this I will plant a blue violet.

Fourth C.— Tulips and roses I'll put into mine.

Fifth C.— In this one, the bells of the pink columbine.

All.— Now these pretty boxes, I'm sure you will say,

Are just little cubes made out of moist clay;
 Six sides or six faces on each one you see;
 And the angles, or corners, are square as can be,—
 Not a cube can we roll, though each slides and stands;
 See us try all these wee ones we hold in our hands.

(All make cubes slide and stand on desks.)

And now if you'd know how these cubes we can make,
 We play as the babies do, "pat-pat-a-cake"
 Yes, we pat and we pat the sides of each one,
 Till the corners are square; then presto! they're done.

[Third Row.]

We roll and we pat, till long, smooth, and round,
 These curious things in our gardens are found.
 They will stand, they will slide; but that's not the
 whole,—

When placed on the desks they will all of them roll.
 One curved face, and here two plain ones you see;
 Now count them together, you'll find there are three.

Pupil.— What are they?

First Child.—O, mine's a cucumber, I know.

Second C.— And I've a round pod where little peas grow.

Third C.— See! this is a carrot.

Fourth C.— Now, I have a beet.

All.— They are all of them ready for some one to eat,—
Not vegetables truly, do we hear some one say?
But just little cylinders made out of clay;
Well, perhaps you are right, yet what harm is there,
pray,

If we turn all our tiresome work into play,
And instead of just molding cube, cylinder, sphere,
We play we have fruits, flowers, vegetables here?

HOUSEKEEPING SONG.

Twins, "Lightly Bow."

BY AUGUSTA REINSTEIN, SAN FRANCISCO.

LIGHTLY sweep, lightly sweep,
So the broom its chape may keep;
Here and there, everywhere,
Sweep with equal care.
Move out chairs and all things small,
O'er the rest big sheets let fall;
Work away, work away,—
Much must be done to-day.
Rest awhile, without frown,
So the dust may settle down;
Windows wash, glasses clean,
Let no spots be seen.
Shake well curtains, dust the mats,
With damp cloth, the shutter-slats,
Corners, sills, tables, books,
And all the little nooks.
Picture-backs, baseboards (a)round,
Full of dust must not be found;
Sharp eyes see every part,—
Work keeps a happy heart.
What you do, do with your might,
There's but one way, and that's the right;
Clean without makes pure within,
Free from stain and sin.

AN AFTERNOON WITH THE FLOWERS.

BY FANNY FERN PHILLIPS, LYNN, MASS.

(Grandmother sitting alone, musing.)

Yes,— " 'Tis June in a sunny region,
Where cooling breezes blow."

No words can express the human ecstasy which envelopes me on a bright June day. Ah! these are the days which I wish could last forever.

"What is so rare as a day in June?"

Well, here are the children; the poet's question is answered. How I do love to have them come to see me! and this is the day we are to have our literary entertainment. Yes, there are twelve of them.

Good afternoon, children.

All.—Good afternoon, grandma.

(Each one presents her with a flower.)

Grandma.—Thanks, thanks, dear children! How kind you were to think of me. And here are the roses! (Putting in vases and looking at each.)

Edith.—Grandma, did you notice I had kept one rose? Byron says,—

"But who can view the ripened rose, nor seek
To wear it?"

G.—That's excellent, Nellie.

Edith.—Ha, ha, grandma! you always get my name wrong, but
"What's in a name? That which we call a rose,
By any other name would smell as sweet."

—Shakespeare.

That is one of my quotations, grandma.

Nellie.—When I told mamma I wanted to learn some gems about flowers, she advised me to study the New Testament, and there I found this, "Consider the lilies of the field, how they grow, they toil not, neither do they spin; and yet I say unto you, that even Solomon in all his glory was not arrayed like one of these."

G.—Remember that, dear. I am fond of flowers, and I'm glad you based your sayings on them. Oh, how I love the roses!

Jessie.—"You love the roses,—so do I. I wish

The sky would rain down roses, as they rain
From off the shaken bush, Why will it not?
Then all the valleys would be pink and white
And soft to tread on. They would fall as light
As feathers, smelling sweet, and it would be
Like sleeping and yet waking all at once.
Over the sea, Queen, where we soon shall go,
Will it rain roses?"

—Geo. Eliot, *Spanish Gypsy*.

May.—"Gather ye rosebuds while ye may,
Old Time is still a-flying;
And this same flower that smiles to-day
To-morrow will be dying."

—Herrick.

Rachel.—"I'd be a butterfly, born in a bower,
Where roses and lilies and violets meet."

G. (patting *Rachel's* cheeks).—The bloom on your cheeks, dear, is like this red rose.

Alice.—"A fairer red stands blushing in the rose,
Than that which on the bridegroom's vestment flows;
Take but the humblest lily of the field,
And if our pride will to our reason yield
It must by sure comparison be shown
That on the regal seat great David's son,
Arrayed in all his robes and types of power,
Shines with less glory than that simple flower."

—Prior.

Josie.—"There the ever-blooming roses
Everlasting spring bestow;
There the snow-white lilies glisten
With the saffron's ruddy glow."

—St. Augustine, *Hymn*.

Jennie.—"Then will I raise aloft the milk-white rose,
With whose sweet smell the air shall be perfumed."
That's what I learned from Shakespeare.

Helen.—Grandma, in looking for gems, I took Pope first to see what he said of the flowers and I find that the rose is his favorite, and he leads me almost to see a beautiful garden he describes,—

"Where opening roses breathing sweets diffuse,
And soft carnations shower their balmy dews;
Where lilies smile in virgin robes of white,
The thin undress of superficial light;
And varied tulips show so dandling gay,
Blushing in bright diversities of day."

G.—Helen, dear, I also can see that lovely garden. I'm glad you did not overlook Pope.

Fannie.—I learned another one from Prior,—

"The twining jessamine and the blushing rose,
With lavish grace their morning scents disclose."

Edith.—Yes, Fannie, but it doesn't last. This is what Dryden says:

"The rose is fragrant, but it fades in time,—
The violet sweet, but quickly past the prime;
White lilies hang their heads and soon decay,
And whiter snow in minutes melts away."

G.—Yes, dears; and you must remember how quickly people fade. Our lives as well as the lives of flowers are short.

Flossie.—Yes, grandma; mamma said that the world consists of people, no two alike in disposition and looks, but each has a particular part to play, and something different from anybody else is expected from each one of us. Isn't it so with the flowers?

"Here scattered wild the lily of the vale
Its balmy essence breathes; here cowslips hang
Their dewy heads, and purple violets lurk
With all the lovely children of the shade."

—Thompson.

G.—I am wonderfully pleased with the beautiful quotations you have learned, and I hope you will never forget them.

Edith.—We will never forget them. But we have learned more than these.

G.—Well, stand up in a row and each give one.

Jennie.—We learned them for you, dear grandma, for we know how you love to hear them.

G.—Thank you for your thoughtfulness. Now begin,—Edith first, and each one in turn till somebody fails.

All.—O, we won't do that!

Edith.—"Now hawthorns blossom, now the daisies spring."

—Pope.

Nellie.—"The silken fleece, impurpled for the loom,

Rivalled the hyacinth in vernal bloom."

—Pope.

Jessie.—"Fair is the king cup that in meadow blows."

—Gay.

May.—"Have you seen but a bright lily grow
Before rude hands have touched it?"

—Ben Jonson.

Rachel.—"Meadows trim with daisies pied,
Shallow brooks and rivers wide." —Milton.

Alice.—"I sat me down to watch upon a bank
With ivy canopied, and interwove
With flaunting honeysuckle." —Milton.

Josie.—"See daisies open, rivers run." —Parnell.

Jennie.—"The marigold whose courtier's face
Echoes the sun, and doth unlace
Her at his rise, at his full stop
Packs and shuts up her gandy shop." —John Cleveland.

Helen.—"A single violet transplant,
The strength, the color, and the size,—
All which before was poor and scant
Redoubles still and multiplies." —Donne.

Fannie.—"The daughters of the flood have searched the mead
For violets pale, and cropped the poppy's head;
The short narcissus, and fair daffodil,—
Pansies to please the sight, and cresset sweet to smell." —Dryden.

Ether.—"A tuft of daisies on a flowery lea
They saw, and thitherward they bent their way," —Gay.

Flossie.—"For cowslips sweet, let dandelions spread." —Gay.

G.—"O, the flowers look upward in every place,
Through this beautiful world of ours;
And dear as a smile on an old friend's face
Is the smile of the bright, bright flowers."

Dear children, you have made me happy this afternoon. I shall never forget.

"Long, long be my heart with such memories fill'd!

Like the vase in which roses have once been distill'd;

You may break, you may shatter the vase if you will,

But the scent of the roses will hang round it still."

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DO YOU want to West? we asked a lady who registered this afternoon (March 19). "It is just what I do want to do," she said,—"to the Pacific coast, if possible." Very well; write to this address," we said, "and you may consider it settled." "Why do you have authority to engage me?" she asked. "Oh, no, not at all; but I know the superintendent pretty well and I know the kind of teacher he wants, and I know you are of that kind." So she went off happy, and in three or four weeks she had received her formal contract. Why not? She was an Oswego graduate, of five years' experience, with supplementary work at college; pleasant in appearance, prompt in manner, with a successful record behind her and another one in front of her. There are **WANT TO** might be called "standing orders" with us for teachers like her. Indeed, one man told us long ago his schools were growing so fast that when we found such teachers willing to go, and understanding just what work they would have there, we might send them along by the first train, and he would take care of them. He hasn't refused any yet, or found any failures among them. So, if you want to go West, we can help you, provided,—ah yes! there's the rub,—provided we are sure you will do well when you get there. We can't send West teachers who haven't done well in the East. These Rocky Mountain and Pacific States don't want our "leavings"; they want the best teachers there are,—teachers who are recognized as good teachers here. If you are such a **GO WEST?** teacher and want to go West, write us immediately.

THREE We take pleasure in announcing that we have concluded arrangements with the Public School Publishing Co., of Bloomington, Ill., for the establishment of a Western Department of the School Bulletin Agency, under the general charge of Mr. Geo. F. Brown, editor of the *Public School Journal*, and well known as one of the foremost educators of the West. The work of this department will be especially **AGENCIES** ana, Iowa, and Wisconsin, in all of in Illinois, Indi- which States Mr. Brown has an acquaintance corresponding with that of Mr. Bardeen in New York. We have also established an office in the Hialto Building, Kansas City, Missouri, under charge of Mr. E. B. Seymour, a graduate of Hamilton College, and a teacher of successful **FOR** Missouri, Kansas, and Nebraska. As in the Syracuse office, these Western departments will be primarily *Recommendation—not Information Agencies*, where teachers will be furnished on application from school officers, and after careful selection of two or three names. Teachers **ONE** States will desiring first class positions in these or adjoining **and the** surest path to them through this Agency. *Every candidate* registered in the **SCHOOL BULLETIN AGENCY** will also be registered in both Western Departments *without extra fee*, and in no case will more than one commission be charged for places secured through either or all, the Syracuse, the Bloomington, and the Kansas City **FREE** offices. Register early, for many applications are already in.

SCHOOL BULLETIN AGENCY,
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Notes and Queries.

Questions and answers for the Notes and Queries should reach us by the first of each month. We respectfully request all the readers of THE TEACHER to take part in the discussions of this department. Send in questions, and furnish answers to questions given.—Ede.

ANSWERS TO QUERIES.

CORRECTION.

748. In turning a one-horse chaise within a ring of a certain diameter, it was observed that the outer wheel made two turns, while the inner wheel made but one; the wheels were each four feet high, and supposing them fixed at the distance of five feet from the axle-tree, what was the circumference of the track described by the outer wheel? E. L. J., Ridge, N. J.

The answer to this query in the February number is incorrect. Here is the solution by algebra:

Since the outer circle has twice the circumference of the inner one, it must have twice the diameter. Let x = diameter of inner circle, and $2x$ = diameter of outer circle. Now there is 10 ft. difference between the diameter of the two circles. Then $2x - x = 10$, or $x = 10$ ft., diameter of inner circle; $10 \times 2 = 20$ feet, diameter of outer circle. $10 \text{ ft.} \times 3.1416 = 31.416 \text{ ft.}$, circumference of outer circle. $20 \text{ ft.} \times 3.1416 = 62.832 \text{ ft.}$, circumference of outer circle.

H. A. P., Stormville, N. Y.

759. Where is the center of population of the United States, according to the census of '90? Give exact location.

At a point in southern Indiana, 20 miles east of Columbus, in latitude $39^{\circ} 11' 56''$, longitude $85^{\circ} 32' 53''$. W. E. L.

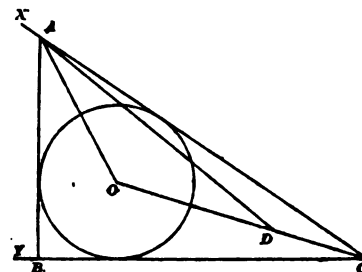
778. A man in New York purchased a draft on Chicago for \$10,640, drawn at 60 days for \$10,802.18. What was the course of exchange? H. A. P.

Rate of interest not stated, but supposing it to be 6%. Interest on \$1.00 for 63 days is .0105. $\$10,645 \div 1.0105 = \$10,529.83$, cost of draft, were there no premium or discount. $\$10,529.83 - \$10,802.18 = \$272.35$ premium. $\$272.35 \div \$10,529.83 = .02584$. Hence course of exchange was $2\frac{1}{2} + \%$ premium.

C. L. F., Peoria, Ill.

780. Construct a right triangle, having given the hypotenuse and the difference between the lines joining the center of the inscribed circle and the vertices of the acute angles.

Analysis.—Let us suppose the problem solved, and let AC be the given hypotenuse, DC the given difference, O the center of the



inscribed circle and ABC , the given right angle. Then $\angle BAC + \angle BCA = \text{one rt. angle}$. $\angle OAC + \angle OCA = \frac{1}{2}$ of a rt. angle, or 45° . $\therefore \angle AOC = 185^{\circ}$. But $OA = OD$. $\therefore \angle OAD = \angle ODA = 22\frac{1}{2}^{\circ}$. $\therefore \angle ABC = 157\frac{1}{2}^{\circ}$. From the above analysis it is quite easy to make the construction. It is as follows:

Construction: Lay off DC = to given difference, and at D lay off an angle of $157\frac{1}{2}^{\circ}$, and produce the side indefinitely to X . With C as center and given hypotenuse as radius, describe an arc intersecting DX in A . Connect A and C . At C on OC , lay off an angle equal to $\angle ACD$, and produce its side indefinitely to Y ; and A lay off on AO an angle equal to $\angle OAD$, and produce its side to meet CY in B ; and ABC is the required triangle.

Proof: AC is given hypotenuse, and DC is the given difference $\angle ADC = 157\frac{1}{2}^{\circ}$. $\therefore \angle ADO = 22\frac{1}{2}^{\circ}$ (sup. to $\angle ADC$) (by cons.). $\therefore \angle OAD + \angle ODA = 45^{\circ}$. $\therefore \angle AOC = 185^{\circ}$ (3rd

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Credit to C. B. S.; C. E. B., Powellville, O.; I. M. J. G., Tacoma, Wash.

810. What colonel, when asked if he could take a battery, replied, "I'll try, sir"?

Colonel Miller, at the battle of Lundy's Lane in the War of 1812. General Brown, while in the battle of Lundy's Lane, calling Colonel Miller to his side, asked him if he could take a battery, located on a height, which was the key to the British position. Colonel Miller replied, "I'll try sir," and heading his regiment secured the coveted position.

T. H. P., Osso, Va.

Credit to W. E. S., Carmel, N. Y.; C. E. B., Powellville, O.; J. H. Crain, McDonough, N. Y.; C. B. S.; Pearlle and Oura, Kokomo, Ind.; Jonah R. H., Arena, N. Y.; Elizabeth Rogers, Ohio, Cal.; K. F., Buffalo, Ia.; I. M. J. G., Tacoma, Wash.

811. A packing house charged $1\frac{1}{2}$ per cent. commission, and cleared \$2316.15 after paying out \$1206.75 for all expenses of packing; how many pounds of pork were packed, if it cost $4\frac{1}{2}$ cents a pound?

Solution: $\$2316.15 + \$1206.75 = \$3522.90 \div \1.015 (or $\$1.00 + \text{commission}$) = $\$3470.837$. $\$3470.837 \div .045$ (cost of one lb.) = 77,130 pounds of pork. Z. RICHARDS, Washington, D. C.

Three well-known contributors do not agree to the above solution. *Who is right?* C. B. S., W. E. L., C. E. B., and a professor of mathematics, think the answer is 521,119 lbs., packed. The following is the solution of C. B. S.: $\$2316.15 + \$1206.75 = \$3522.90$. Total commission $\$3522.90 \div 1\frac{1}{2}\% = \2348.60 , value of pork. $\$2348.60 \div \$4\frac{1}{2} = 521,191\frac{1}{2}$ lbs., packed.

812. A tank is 8x10 feet at the top, and 6x10 feet at the bottom, and ten feet deep. How high is the water when it is half full?

Add the area of each end of the tank to 4 times the area of the middle section, and multiply the sum by $\frac{1}{2}$ of the length (or, in this case, depth). The result will be the volume of any such solid.

To find the depth when half full: Put x = width of tank at surface of water; y = depth.

$$\frac{8-6}{2} : \frac{x-6}{2} :: 10 : y.$$

$$5x - 30 = y. \quad x = \frac{y+30}{5} \dots (1).$$

$$\frac{y}{6} \left\{ 10x + 60 + 4 \left[10 \left(\frac{x+6}{2} \right) \right] \right\} = 350 \dots (2).$$

(350 being one half the volume of tank.)

From (2), $xy + 6y = 70$. Substitute the value of x as in (1), $y^2 + 60y = 350$; $y + 30 = \pm 35$; $y = -30 \pm 35$; $y = 5$, the positive value only being applicable. Whence the depth required = 5.855 ft.

A. M. SCRIPTURE, New Hartford, N. Y.

Credit to C. E. Barbridge, Powellville, O.; Jonah R. Hotchkiss, Arena, N. Y.

814. What is the "vital knot"?

The spinal ganglia.

Another answer.—The "vital knot" is the bond of marriage.

815. Name the solids of the human body.

Muscle, fat, gray and white matter of the brain and nerve, mucus membrane, skin, bone, dentine, enamel, hair, nails, membrane, cartilage.

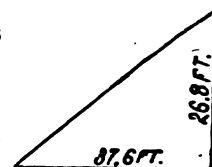
X. Y.

816. What is the length of the longest plank 4 feet wide, lying flat, that may be placed in a room 30ft. X 40 ft.?

The end of the plank and the end and side of the house form a right-angle triangle of which 4 is the hypotenuse. The length of the base is to the perpendicular as 3 is to 4.

$$4 \text{ feet}^2 = 16, 3^2 = 9, 4^2 = 16; 9 + 16 = 25; \sqrt{25} \times 16 = 2.4 \text{ ft.}; \sqrt{25} \times 16 = 3.2 \text{ ft.}; 40 - 2.4 \text{ ft.} = 37.6 \text{ ft.}; 30 - 3.2 \text{ ft.} = 26.8 \text{ ft.}$$

The edges of the plank form the hypotenuses of two triangles, whose bases are



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788. Why is a person shorter at night before going to bed than in the morning?

Between the joints of the vertebrae are layers of cartilage which separate the adjacent surfaces of bone. During the day the constant pressure upon these joints, while the body is erect, diminishes the thickness of these cartilages, so that a person is not so tall in the evening as in the morning. The effect of this compression passes away when the body is in a reclining position.

G. T., *Pomo, California.*

Credit to J. C., Clintonville, O.; G. M. W., Pittsfield, Vt.; Aug. H. L., Wausau, Wis.; E. L. F., East Peoria, Ill.; J. H. C., McDonough, N. Y.; S. J. B., Robesonia, Pa.; A. O., Carson, Nev.

789. What are the three highest volcanic peaks of the world?

Aconcagua, 23,910; Sahama, 22,350; Tupungato, 22,016.

S. L. M., *Bethel, Pa.*

Credit to C. L. F., East Peoria, Ill.; S. J. B., Robesonia, Pa.; H. A. P., Stormville, N. Y.

790. What and when was the Whiskey Insurrection in Pennsylvania; who were the leaders, and how long did the disturbances last?

O. T. W., *De Bois, Pa.*

March 8, 1791, Congress passed the first excise law, placing a tax upon whisky. Much dissatisfaction was caused by it in various parts of the country, but especially in Western Pennsylvania, because the farmers there being at a great distance from shipping points, depended largely upon the distilleries for a market for their grain. William Bradford, who is said to have been a selfish, scheming politician, inflamed the discontent to such a pitch that the farmers armed themselves and gathered into companies to resist the collection of tax. Washington sent Lee against them with 15,000 militia. Upon his approach the rioters disbanded and fled to their homes. They afterward submitted to the laws, receiving full pardon for their offenses. This occurred in 1794.

C. L. F., *East Peoria, Ill.*

Credit to C. E. S., Manheim, Pa.; A. C., Clintonville, O.; S. J. B., Robesonia, Pa.

791. With what did Cain slay Abel?

Some suppose that Cain slew Abel with his brother's crook, which he used while a shepherd; others say he took a piece of the wood from his own sacrifice which God would send no fire to burn.

S. J. B., *Robesonia, Pa.*

792. A man bought a farm for \$6000, and agreed to pay principal and interest in three equal annual installments. What was the annual payment?

Assume that 6% is the rate of interest. This can be solved by geometrical progression. Also very neatly thus: Let the interest be paid, and \$1 of the principal, the first year. Then the interest of \$1 can be applied to the reduction of the principal the second year, thus:

\$1	=	reduction in principal	1st year.
1.06	=	"	2d "
1.1236	=	"	3d "
\$3.1836	=	"	3 years.

\$3.1837 : \$6000 :: \$1 : () = \$1884.66, the first reduction in principal. \$1884.66 + \$369 (1 year's int.) = \$2244.66, required payment.

A. M. SCRIPTUM, *New Hartford, N. Y.*

Credit to W. L. J.; C. C. W., Burden, Kan.; C. L. F., East Peoria, Ill.

794. Who is called "The tall Sycamore of the Wabash"?

Daniel Vorhees, a Democratic politician and United States Senator of note, of Indiana.

A. O., *Carson, Nev.*

Credit to W. J. D., Duke Center, Pa.; J. L. O., Colby, Wis.; S. L. M., Bethel, Pa.; C. L. F., E. Peoria, Ill.; H. A. P., Stormville, N. Y.

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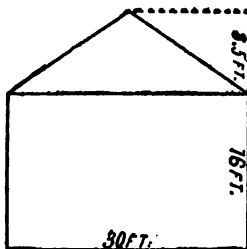
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798. How many feet of boards are there in the four sides of a barn 30 x 40 feet, 16 feet high to the eaves and 24½ feet high to the gable peaks?

$$\begin{aligned} 40 \times 16 &= 640 \text{ sq. ft. in one side.} \\ 640 \times 2 &= 1280 \text{ " " both sides.} \\ 30 \times 16 &= 480 \text{ " " one rect. end.} \\ 480 \times 2 &= 960 \text{ " " both rect. ends.} \end{aligned}$$



$$\frac{30 \times 8.5}{2} = 1275 \text{ ft. in one tri. end.}$$

$$1275 \times 2 = 2550 \text{ " both tri. ends.}$$

1280 sides.

960 rectangular ends.

2550 triangular ends.

5790 square feet of boards in all.

797. Name the fluids of the body?

The fluids of the body are the blood, lymph, chyle, chyme, pancreatic juice, bile, intestinal secretions, urine, the fluids of the sebaceous and sudoriferous glands, tears, synovia, mucous and serous secretions of the membranes.

C. E. B., *Powellsville, O.*

Credit to W. E. L.

801. How many inch boards can be sawed from a stick of timber 2 ft. square, if the saw cut is $\frac{1}{4}$ of an inch.

Solution.—One side of the square is 2 feet, or 24 inches, or $\frac{4}{1}$ ft. The inch board plus $\frac{1}{4}$ of an inch equals $\frac{11}{4}$. There will be as many boards as $\frac{11}{4}$ is contained in $\frac{4}{1}$ = $19\frac{1}{4}$ boards, but $\frac{1}{4}$ will make one more board, thus making 20 boards. *Ans.*

Z. RICHARDS, *Washington, D. C.*

Credit to A. M. Scripture, New Hartford, N. Y.; C. E. B., *Powellsville, O.*; B. C.

808. How can one best learn and distinguish between the sounds *j* and *ch*. Having trouble with these sounds I should like to know how to overcome this defect.

A SUBSCRIBER.

To enunciate the sounds represented by *j* and *ch*, the vocal organs must be in the same position, but the sound of *j* is vocal, and the sound of *ch* is whispered.

ZALMON R., *Washington, D. C.*

QUERIES.

829. What was the origin of the Chicago Fire? Give history of fire.

830. At the beginning of the administration of the United States there were only four "executive departments." Out of which of these departments have the new ones been created, and when?

831. Define "political right," and give an illustration.

832. Define "political duty," and give an illustration. S. K.

833. What tradition influenced in selecting the site for Westminster Abbey?

834. When did the Abbey lose its conventional character, and why?

835. Which is correct, "I should have liked to have gone," or "I should have liked to go"? Please give reason for correct form.

A. E. E.

836. What was the cause and result of the recent trouble between San Salvador and Guatemala in Central America?

837. How many national parks are there in the United States? When were they established and where located?

838. Has the Oklahoma country been organized into a territory? If so, who is its governor and what are its boundaries and capital?

839. What is the capital of the state of Louisiana? When was it made the capital and what was the capital proceeding that date?

Same question for the state of West Virginia and the territory of Arizona. I notice that our geographies disagree on these points.

840. Required the shortest distance that a fly can walk from the lower corner of a room, 20 ft. square and 20 ft. high to the farthest upper corner?

W. L. J.

841. What American battle is known as the battle on the house-tops?

842. When has the question of the public lands threatened the Union?

843. What is the difference between the common and exact interest of \$975 from April 4, 1881, to Aug. 10, 1882, at 6%?

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123. BLANKS.

Fill the blanks in each sentence with words pronounced alike, but spelled differently.

1. Her — is hanging near the —.
2. He — have given the poor man a —.
3. I can — untie the —.
4. Which — of them — prize?
5. The — was so dark that the — lost his way.
6. Can you — a ripe — with a — of scissors.
7. He — that the garment she wore was not —.
8. I heard — sing a —.
9. If he has — against me, he — to tell me.
10. The girl became — when she lifted the heavy —.

124. ANAGRAMS.

- | | |
|---------------------|---------------------|
| 1. Nay I repeat it | 6. Sly ware. |
| 2. Best in prayers. | 7. Mad as queer. |
| 3. Nine Thumps. | 8. Into my arm. |
| 4. Rare mad frolic. | 9. March on. |
| 5. Tim in a pet. | 10. I hire parsons. |

125. DIAMOND.

1. A letter.
2. To Fondle.
3. A lady.
4. Gentle.
5. Having physical culture.
6. A town in Morocco.
7. Caverns containing minerals.
8. An Animal.
9. A letter.

126. LADDER.

Left side—Patrid flesh. Right side—On the end.

The rounds have five letters each, and the lower round is—Curiously. The second—To renovate. The third—The fruit of the oak.

127. HALF SQUARE.

1. Common to a nation.
2. The destroying angel.
3. One who makes garments.
4. A sluggard.
5. Scent.
6. A conjunction.
7. An article.
8. A letter.

128. REBUS.



ANSWERS TO APRIL PUZZLES.

118. Eyelid.
- 119.—1. Astronomers. 2. Breakfast. 3. Breath. 4. Catalogues. 5. Charades. 6. Christianity. 7. Congregationalist. 8. Editors. 9. Embargo. 10. Parliament.
120. Torrid Zone.

121.

D
L I T
L O V E S
D I V I S O R
T E S T Y
S O Y
B

122. Get a name to rise early and you may lie abed all day.

Answers have been received from R. M. Olcott, Helen M. Collier, Grace E. Walton, Annie C. Aikley, Amy C. Thompson, and Mary A. Lyon.



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MORNING TALK IN THE KINDERGARTEN.

BY MINNIE G. CLARK.

A Wonderful Spinner.

CHILDREN, we are going to talk about a strange thing this morning,—a very strange and wonderful little creature. It is so tiny that when all grown up, it is not more than three or four inches long, and when first born I am sure that grandma would have to put on her strongest spectacles to see it at all; and yet, though so small, it can do what you nor I could never do,—it makes the silk that is woven into our shining satins and soft velvets, and all our pretty ribbons.

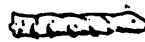
Can any one guess what it is? Some of you, then, will be surprised to know that it is a worm!—not one of the ordinary little green worms, that feeds on everything in the garden, from rose-petals to cabbage-leaves, but a handsome, creamy fellow, who could not live out of doors in this country; its real home is in a place away across the water, where it is summer all the year. There peo-

ple raise great armies of them out on the mulberry trees. But we have need of so much silk that somebody brought across the ocean a great many eggs, and built a comfortable house for the baby worms to live in,—so they are just as happy here, and work all their lives to make something to give you pleasure.

Here is a picture of the eggs (Fig. 1) as they look just before the baby worm is born. Can you imagine anything alive coming from such mites? They are born in the spring just as soon as the baby buds begin to peep



FIG. 1.



16th Day.
FIG. 2.



22d Day.
FIG. 3.

out of their cradles, and shake out their damp, crumpled dresses in the warm sunshine. Mr. Somebody brings the eggs from the cool places where they have been all winter into a warm room, and in a few days out creeps each baby worm, and he is so hungry,—so very, very hungry! But Mr. Somebody knows all about it, and soon a soft netting tray is laid over him instead of before him, as is done with baby brother's tray; he smells something good, and in a twinkling he crawls up through the netting and finds what he loves best in the world,—mulberry leaves. They settle down at once on the juicy, tender food, and hew they do eat! You would wonder where they could stow away so much, but they know what they are about,

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for it not only makes them grow very fast, but all the time they are turning it into silk. In a few days you would hardly know the baby worms, for they look something like Fig. 2.



FIG. 4.—27th Day.

To tell the truth, they have outgrown their clothes, and after five days are obliged to stop eating until they can change them. They keep very still, with their heads high in the air, for a whole day; then the old clothes drop off, and there they appear in nice new ones, handsome and more comfortable than the old ones; then they begin to eat more eagerly than before, and you can almost see them grow. Their netting trays are changed for those made of paper, with great round holes in them, and as soon as they have finished one meal another tray is laid over them. They travel up through the holes as fast as they can go on to the fresh food. Every five days they outgrow their coats; and in one month, then, you would never know our brown baby worm, for it is a great, creamy white beauty. (Fig. 5.)



FIG. 5.—33d Day.

And now what does their friend do but gather a great many twigs and stalks of grain, and fasten them to the framework of the silkworms' house. What do you sup-

pose that is for? If you could see them about this time you would notice they were growing restless; for the first time they seem to want something beside mulberry leaves. They raise their heads and look about them as if in search of something, and then they begin to crawl; one goes this way, another that way; soon they find the twigs; then up they go, up and up, until they find a nice cosy place among the twigs, and there they stop. Now can you guess what is going to happen? The worm has finished making the silk,—now it is going to spin.

It begins at once; out from a little hole near the worm's mouth comes something that hardens into a silky

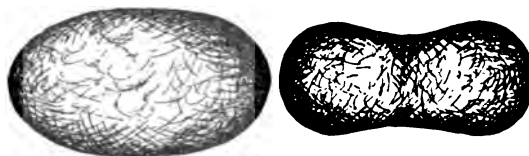


FIG. 6.

thread; this he keeps spinning until it is long enough to reach a twig; still he spins away until there is quite a veil of floss all about him, fastening him to the twigs; then he begins on the silken house that we call a "cocoon"; round and round goes his tireless head until our worm is entirely hidden from view, and his work is done (Fig. 6). No one will ever see the silkworm again,—for when his work is finished he changes from a worm to a moth, and will some day work out of the cocoon, looking

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so very different,—just a plain little moth (Fig. 7), with four soft, gray wings and two feathery antennæ; but if he is allowed to come out of the cocoon it spoils the silk, so they only save enough to give them plenty of eggs for

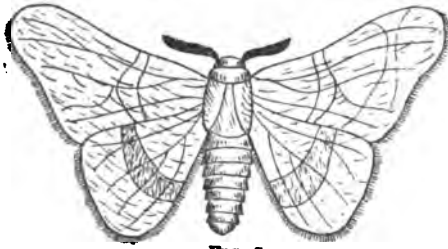


FIG. 7.

another family of silkworms; the others are gently put to sleep, all inside their nests; and some day the cocoon is thrown into water to loosen the thread, and then the silkworm's gift to us is wound off; there are yards and yards of it, but it is so fine that a great many threads have to be twisted together to make that on the spools in mamma's work-basket.

THE Kinderpartment of the N. E. A., at its coming meeting in Toronto should formulate and decide upon plans for the work to be exhibited at the Columbian Exposition in Chicago, in 1893. Mrs. Eudora Hailmann, the president, is chairman of a committee to report. Give her your hearty support.

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This joyous liberty can be preserved, this cheerful obedience can be enforced only so far as the child is led and guided by the laws of its development and growth; to the teacher, then, the study of these laws is of paramount importance, and nowhere can this be done so well as with Froebel, who takes us to the child and studies it though its physical, mental and moral activity as manifested in the so-called gifts and occupations of the kindergarten.

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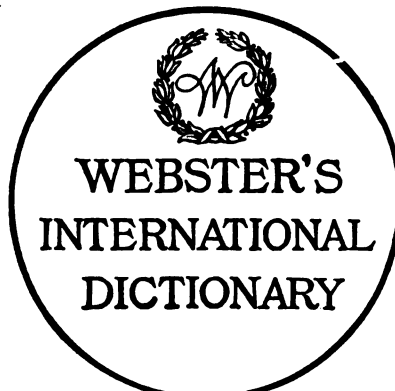
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rate doing enjoined by its occupations; and not only is it important for those who are to direct the little ones, personally, during the first few years of their lives, but for those also who are to take up the work later, not only that they may be qualified to have proper oversight of the work in cases where they may have supervision of it, but that they may apply its principles to their own teaching. The kindergartner, in addition to the regular kindergarten training, should have a broad general culture and an extensive knowledge of pedagogy. The teacher in the higher grade should add to his other qualifications a thorough knowledge of the kindergarten. The first should know that to which her work tends; the second, from what it proceeds; and both should love their profession and those they profess to teach, and be willing to spend and be spent for them.

It may be hard for us to come down to the condition of little children, or we may find it difficult to rise to the importance of the subject; but our great teachers have ever found their greatest inspirations in these little ones; and he whom all Christian people delight in calling "The Great Teacher" likened the kingdom of heaven to a little child and declared that unless we become as one we shall not enter therein.

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While the law of heredity is in force, there will long continue to be multitudes who will not have a good setting out in the very start of life; it will be a great while before all homes are such as to exert nothing but good



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relations to his associates; and so far as right conduct is concerned, he knows something of duty. His training has been broad and a good foundation laid for future work.

The manual training school is regarded by many simply as a school in which trades are taught; where one learns to use the saw, the plane, the auger and the hammer, that he may know how to cut off a board, to smooth a surface, bore a hole or drive a nail. But it is not this; it is a high school of the highest order. The tools are used to produce the best *thinking*. It is somewhat unfortunate that the term, manual training, must be applied to a school whose function is to educate and train the student physically, mentally, and morally as no other school can. Manual training has been defined as the expression of thought by other means than gesture and verbal language. But it is more. It is the *getting of thought* and the *subsequent expression of it* by means of forms, the parts of which are first studied in relation to the whole and to each other, and afterwards constructed of a suitable material by means of suitable tools. It is the *language of construction*, and no language that we use can equal it in clearness and definiteness, and in its power of preserving the continuity of the students' thought. Our present manual training schools are high schools in which the language of construction is highly specialized.

Between the kindergarten and the manual training school, so-called, are the elementary schools, and as it is from these that the great body of our young people go out, the work should be of the highest order. The spirit of the kindergarten should be infused into them. The language of construction found in the kindergarten and the manual training school should be introduced into all of them. The course of study should be so broad as to embrace the elements of general knowledge, so that no matter when the pupil has to leave school his horizon may be *entire* if not *wide*. This does not mean that superficial methods should be adopted, for in all cases the work should be accurate and thorough. These elements should

be presented in such a way, however, as to *awaken and sustain interest*, and when he leaves school the child will know how to study, he will take pleasure in books and other objects of thought; he will add circle after circle to his widening horizon; he will go on educating himself and prepare himself for that "complete living," which Herbert Spencer says is the function education has to perform.

In the work that is before us as kindergarteners, whether it be in the home, to which all turn with tender memories, in the kindergarten where a broad and beautiful foundation is laid for the work in the elementary schools themselves, from which, as has been said, the great body of our young people go out into the busy world, or even in the High School reached by a few, let us remember above everything else *the spirit of our work*; if we lose that all is lost. "System and method are in themselves only empty forms; to the teacher it is reserved to breathe into them the life-bringing spirit."—"The letter killeth, the spirit giveth life."

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"The Kindergarten and the Public Schools," President James MacAlister, Penn.

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Appointment of Committees. Closing Hymn.

Thursday.—Opening Hymn.

"Organic Connection of Kindergarten and School."

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